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Application Of ICT In Relation To Their Academic Achievement Of College Students

Mrs. K.S.Sudhini[1], Dr.N.Amuthasree[2]

[1]Roll No.1942090035
Department of Education
Annamalai University
[2]Assistant Professor Department of
Education Annamalai University

Abstract

The main objective of present paper is to find the relationship between the application of ICT and Academic achievement. For that 468 College students from Andaman & Nicobar Islands were selected by Stratified random sampling technique. Application of ICT scale which constructed by the investigators is used and the results were analysed and also found out that application of ICT and academic achievement have positive relationship and conclude this result will lead to holistic development in the vast country like India.

Key words: ICT, Academic Achievement, Positive relationship, holistic development

Introduction

The class room of the 21st century of this digital era is rapidly changing with the help of technology. ICT has revolutionized the way of education industry functions. Hence it is one of the potent tools for in the modern era's educational reforms and changes. Learning is ongoing lifelong activities, where the expectations of learners are changed by seeking knowledge that helps them to depart from traditional approaches. In course of time, people started to expect and eagerly seek out for knowledge sources for these learners; skills in using ICT remain an indispensable prerequisite.ICT opens a world of possibilities for the betterment of the education sectors as well as learning and curiosity learners.

Significance of the study

ICT assists to transform teaching environments into a learner-cantered one through the resources remain abundant on the Internet as well as knowledge can be seized via visual

presentation, video clips, audio sounds etc., (Castro Sánchez and Alemán 2011). Teachers authorize learners for plans, decision making & so forth, as learners are involved in the ICT classroom learning processes (Lu, Hou and Huang 2010).As a result of ICT-based learning, learners and instructors are more likely to collaborate, not only in a classroom setting but also the collaboration process goes against the conventional learning environment, such as distance learning, where educators and learners are inspired to seek learning even after school or college hours. According to Alexander and Jonassen (1999), ICT somewhere is acting as a mediator between dynamic learning system and higher request thinking approach. It might encourage causable learning and reflection to the extent with respect to subject or substance. (Susman, 1998). Through ICT the quality of education is improved and it reaches too many students in the world. Education is a dynamic process with the changes in the economy it has been upgraded and it becomes easy with the help of ICT and it helps in quality education and better learning. Therefore, the investigator decided to study the Application of ICT and its relation to Academic Achievement in her residing Islands.

Review of Related Literature

Witte and Rogge(2014) analysed the effect of ICTs on the academic performance of students in Holland, drawing on data from the 2011 "Trends in International MathematicsandScienceStudy"(TIMSS).Applyingascorematching methodology,theauthorsfoundnostatisticallysignificantdifference between the outcomes obtained by students who had access to technology and made use of it and those who did not.

Córdoba Gómezand Herrera Mejía (2013) and by **Muñozand Ortega(2014)** they conducted the studies which are worthy to mention. The former explored the link between ICT and student performance in mathematics and the later represents a valuable contribution to the discussion on the effect of use of technologies on educational outcomes. The study looked at student data from two schools in Colombia, in the municipalsofMedellín and Duitama. The authors concluded that the incorporation of these technologies in the classroom leads to improvements in academic performance only if teachers receive support from specialists to help them change their teaching practices.

Sprietsma(2012) estimated the effect of the availability and use of computers and the Internet as pedagogical tools on the math and reading scores of eighth-grade students in Brazil and found that

ICTs, paradoxically, had a negative effect on academic achievement.

McMahon (2009) from his study revealed that significant correlations were existed statistically between critical thinking skills acquisition in addition to studying with ICT. In the ICT environment, higher critical thinking skills can be fostered by a longer exposure. Therefore, colleges or even schools are advised strongly for integrating technology across every learning area among all learning levels. Students can apply technology to the higher cognition levels achievement within the contexts of learning.

Research Gap

ICT's have been introduced in schools to transform teaching and learning processes and improve strategies for academic achievement (Kozma, 2003 and 2008; Sunkel,2006; Carneiro, Toscano and Díaz, 2009; Rodríguez, Nussbaum and Dombrovskaia, 2013). Accordingly, a number of studies have looked at the effect of these technologies on school performance (Machin, McNallyandSilva, 2006; Aristizabal, Caicedoand Escandón, 2009; Spiezia, 2010; Carrillo, On ofaandPonce, 2010; Cristiaandothers, 2012). The literature also includes studies that have focused don other determinants of educational outcomes but used ICT related variables as controls. In addition, there exists research gap in majority of studies conducted cross, quasi experimental those studies were not considered the summarising annual performance of the students and more over researchers were chosen in school students as sampling. This investigation tries to find the relationship between college students' annual academic achievement in their Application of ICT.

Statement of the Problem

The need for ICT in education is to create a learning environment that focuses on students. ICT tools address the gap between teacher and learner-centred environments. As ICT gives access to a wide range of information, all students' unique educational requirements are met. Teachers can assess the use of such information through quizzes and examinations. Teachers can find adequate supplementary material in the internet for students who require extra attention. Using ICT, teachers can share those materials either with the entire classroom or with individual learners. Either way, every student has a personalized learning experience due to ICT. So, this investigation is titled as

"**Application of ICT in relation to their Academic Achievement of College students"**.

Objectives of the Study

1. To study the level of Academic achievement of college students of Andaman & Nicobar Islands.
2. To study the level of Application of ICT of college students of Andaman & Nicobar Islands.
3. To find out whether there is any significant difference in Academic Achievement among college students of Andaman & Nicobar Islands with respect to sub-samples. Gender, Types of Management and Parental Education
4. To find out whether there is any significant difference in Application of ICT among college students of Andaman & Nicobar Islands with respect to the above sub-samples
5. To find out whether there is any significant relationship between Application of ICT and Academic Achievement of college students of Andaman & Nicobar Islands with respect to entire and sub-samples

Hypotheses of the Study

1. The level of Academic achievement of college students of Andaman & Nicobar Islands is low.
2. The level of Application of ICT of college students of Andaman & Nicobar Islands is low.
3. There is no significant difference in Academic Achievement among college students of Andaman & Nicobar Islands with respect to sub-samples, Gender, Types of Management and Parental Education.
4. There is no significant difference in Application of ICT among college students of Andaman & Nicobar Islands with respect to the above sub-samples.
5. There is no significant relationship between Application of ICT and Academic Achievement of college students of Andaman & Nicobar Islands with respect to entire and sub-samples.

Methodology of the study

Normative Survey method was adopted for this study with 468 college students as samples in Andaman & Nicobar Islands with the following tools,

1. Annual marks percentage collected from college records
2. Application of ICT scale constructed by the Investigator. (2022).

Sample Distribution

Stratified Random Sampling technique was used for the present study, as per the following table no.1.

Table – 1 SAMPLES DISTRIBUTION OF THE STUDY

S. No.	Demographic Variables	Sub - Samples	N	Percentage
1	Gender	Male	166	35%
		Female	302	65%
2	Type of College	Govt.	392	84%
		Govt.-Aided	76	16%
3	Parental Education	School level	356	76%
		College level	112	24%

Data Analysis and Interpretation

Collected data were analysed with suitable statistical technique like Descriptive (Mean & SD), Differential ('t' test - Significance level of 0.05) and Correlation (PPM) analysis after framing necessary hypotheses and the results are interpreted.

Level of Academic Achievements Scores

Variable	Sl.No.	Method	Mean	SD	Score	Category
Academic Achievements	1	Mean + SD	74.18 + 10.22		84 & above	High
	2	In-between Score			65 to 83	Average
	3	Mean - SD	74.18 – 10.22		64 & below	Low

Hypothesis – 1: The level of Academic achievement of the college students of Andaman & Nicobar Islands is low.

Table 2 Mean and Standard Deviation of the Academic Achievement Scores

Sl.No.	Sub - Samples		N	Mean	SD
	Entire Sample		**468**	**74.18**	**10.22**
1	Gender	Male	166	73.87	9.390
		Female	302	74.64	9.467
3	Types of Management	Government	392	73.60	9.238
		Govt. - Aided	76	78.32	9.526
5	Parental Education	School Level	356	74.41	9.307
		College Level	112	74.24	9.882

From the above table 2 it is observed that the Mean and Standard Deviation value of entire sample are 74.18 and 10.22, which indicates that the mean score lies between the Average values (65 to 83). It is true in the case of all the categories of sub samples. Among the sub samples Government aided college students are having highest mean value 78.32whereas Government college students are having lowest mean value 73.60. It is inferred that the Academic Achievement scores of college students is average. So, the framed hypothesis rejected. Hence it is concluded that the **Andaman & Nicobar Islands college students have the average level of academic achievement.**

Level of Application of ICT Scores for Entire Sample

Variable	**Sl.No.**	**Method**	**Mean**	**SD**	**Score**	**Category**
Application of ICT	1	Mean + SD	125.99 + 30.04		156 & above	High
	2	In-between Score			97 to 155	Average
	3	Mean – SD	125.99 - 30.04		96 & Below	Low

Hypothesis – 2:The level of Application of ICT of the college students of Andaman & Nicobar Islands is low.

Table 3 Mean and Standard Deviation of the Application of ICT Score

Sl.No.	**Sub - Samples**		**N**	**Mean**	**SD**
	Entire Sample		**468**	**125.99**	**30.04**
1	Gender	Male	166	120.18	29.413
		Female	302	129.19	29.962
3	Types of Management	Government	392	127.27	29.058
		Govt. - Aided	76	119.39	34.165
5	Parental Education	School Level	356	126.71	29.193
		College Level	112	123.71	32.650

From the above table 3 it is observed that the Mean and Standard Deviation value of entire sample are 125.99 and 30.04, which indicates that the mean score lies between the Average values (97 to 155). It is true in the case of all the categories of sub samples. Among the sub samples female college students are having highest mean value 129.19 whereas Government aided college students are having lowest mean value 119.39. It is inferred that the Application of ICT scores of college students is average. So, the

framed hypothesis rejected. Hence it is concluded that the **Andaman & Nicobar Islands college students have the average level of application of ICT.**

Differential Analysis

One of the objectives of the present study is to find out the significant difference among the sub samples selected in the case of college students Academic Achievement and Application of ICT after framing necessary hypothesis.

Hypothesis – 3: There is no significant difference in Academic Achievement among college students of Andaman & Nicobar Islands with respect to their Gender, Types of Management and Parental Education.

Table –4 't' Value for Academic Achievements Scores – Sub Samples Wise

Variables	Sub Samples	N	Mean	SD	't' Value	Remarks
Gender	Male	166	73.87	9.390	-0.850	Not Significant
	Female	302	74.64	9.467		
Types of Management	Government	392	73.60	9.238	-3.967	**Significant**
	Govt. - Aided	76	78.32	9.526		
Parental Education	School Level	356	74.41	9.307	0.162	Not Significant
	College Level	112	74.24	9.882		

From the above table 4, it is observed the following observations

1. In the case gender the calculated 't' value is found to be -0.850 which is less than the table value at 0.05 level, hence the formulated hypothesis is accepted and it is inferred that the **students do not differ in their academic achievement based on their gender.**
2. In the case types of management, the calculated 't' value found to be-3.967 this value is greater than the table value at 0.05 level, hence the formulated hypothesis is rejected and it is inferred that the **students differ in their academic achievement based on their college management.**
3. In the case Parental Education, the calculated 't' value found to be 0.162 this value is less than the table value at 0.05 level, hence the formulated hypothesis is accepted and it is inferred that the **students do not differ in their academic achievement based on their Parental educational qualification.**

Hypothesis – 4: There is no significant difference in Application of ICT among college students of Andaman & Nicobar Islands with respect to their Gender, Types of Management and Parental Education.

Table – 5 't' Value for Application of ICT Scores – Sub Samples Wise

Variables	Sub Samples	N	Mean	SD	't' Value	Remarks
Gender	Male	166	120.18	29.413	-3.132	**Significant**
	Female	302	129.19	29.962		
Types of Management	Government	392	127.27	29.058	2.10	**Significant**
	Govt. - Aided	76	119.39	34.165		
Parental Education	School Level	356	126.71	29.193	0.924	Not Significant
	College Level	112	123.71	32.650		

From the above table 5, the following observations are made

1. In the case gender the calculated 't' value found to be -3.132 this value is greater than the table value at 0.05 level, hence the formulated hypothesis is rejected and it is inferred that the **students differ in their Application of ICT based on their gender .**
2. In the case types of management, the calculated 't' value found to be -3.967 this value is greater than the table value at 0.05 level, hence the formulated hypothesis is rejected and it is inferred that the **students differ in their Application of ICT based on their college management.**
3. In the case Parental Educational Qualification, the calculated 't' value found to be 0.924 this value is less than the table value at 0.05 level, hence the formulated hypothesis is accepted and it is inferred that the **students do not differ in their Application of ICT based on their Parental education.**

Hypothesis – 5:There is no significant relationship between Application of ICT and Academic Achievement of college students of Andaman & Nicobar Islands with respect to entire samples.

Table – 6 Relationship between Academic Achievement and Application of ICT

Correlations		
	Academic Achievement	ICT

Academic Achievement	Pearson Correlation	1	.314
	Sig. (2-tailed)		.000
	N	468	468
Application ICT	Pearson Correlation	.314	1
	Sig. (2-tailed)	.000	
	N	468	468

The above table – 6it is observed the calculated 'r' value is 0.314 hence it is inferred that there is **low level positive relationship** between the Academic achievement (DV) and Application of ICT (IV), hence the formulated hypothesis is accepted.

Findings of the study

- ✓ Andaman & Nicobar Islands college students have the average level of academic achievement.
- ✓ Andaman & Nicobar Islands college students have the average level of application of ICT.
- ✓ Andaman & Nicobar Islands college students do not differ in their academic achievement with respect to gender and parental education type of college management.
- ✓ Andaman & Nicobar Islands college students differ in their academic achievement based on their college management.
- ✓ Andaman & Nicobar Islands college students do not differ in their application of ICT with respect to parental education and type of college management.
- ✓ Andaman & Nicobar Islands college students differ in their application of ICT based on their gender.
- ✓ There exists positive relationship between the Academic Achievement (DV) and Application of ICT (IV) of college students.

Discussion of the Results

The findings revealed that the Application of ICT and Academic Achievement of Andaman &Nicobar Islands college students are at average level. It is a welcoming sign, though the islands are separated from the main land. In the present study significant difference is existed in the application of ICT and achievement which is in contrast with the studies of Writte and Rogger(2014). Application of ICT and achievement is significantly related in the present study. The same result is arrived in the studies of McMohan (2009) and Gordobaet.al. (2013). But it differs from the studies of Sprietsma (2012).

Conclusion

The present study proves that college students of Andaman &Nicobar Islands are upto the level of their counterparts in the mainland. And also, they show quite interesting sign in their application of ICT and academic achievement, certainly it will lead to holistic development in the vast country like India.

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