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Impact of Technology on the academic achievement of students and Teaching Effectiveness

[1]**Naveen Gangadhara Rugi**,
Research scholar Department of Sociology
Jnan Sahyadri, Shankaraghatta

[2]**Dr. Chandrashekhar E**
Associate professor, Department of Sociology
Jnan Sahyadri, Shankaraghatta

Abstract

This descriptive study determined the use of computers of students and teachers and its effect to students academic achievement in Morarji Desai residential Schools. The computers affecting technology self confident, utilization, teaching competence and students achievement were emphasized. Servey questionnaires, focus students group discussion and key informant interviews were used. Respondents include 20 Teachers and 300 students that comprising the 10 morarji desai residential schools in Davanagere district. Stratified random sampling technique were utilized in selection of the respondents by residential schools. Statistical tools include frequency counts, percentage, and Z-test, for analysis of data. The findings revealed the existence of significant relationship between students achievement and their computer literacy as well as students technology utilization and their family income. Data showed that student's achievement is highly influenced by the teacher's effective teaching , by the teacher's computer literacy nor by their competence in technology. Class 10 students of morarji desai residential schools utilize technology the most for their academic achievements. With the **Result** residential school students have a mean average of 82.66 % which has the interpretation of academic achievement/performance and Teachers were utilize technology like computer to their teaching activities 80.00 % of teachers said it useful to students academic performance. **Inferences :**The calculate value is more than table value , hence null hypothesis is rejected and we say that the computer used by students and government providing technology aspects are very good. So selecting alternative hypothesis that there is relationship between number of students & number of computers in Morarji desai residential schools.(Z-test value =2.786).

Keywords : Technology, Academic achievements, Computer literacy, Teaching effectiveness.

Introduction

MDRS plays a role in the promotion of education in rural india through the construction of self-oriented, integrated residential school complexes called the Morarji Desai Residential Schools in various taluks of Karnataka. Sponsored by the karnatak residential educational institutions society of the social welfare department of government of Karnataka. Education is a dynamic concept. Technology can be utilized to improve teaching and learning and help our students be successful. Through the use of learning management systems students can access online resources to get assistance on demand beyond the physical reach of their teacher. Technology

can also extend education in another way. The students' academic performance refers to the enhancement of the students' current state of knowledge and skills reflected in their GPA and also in the formulation of their personality and academic growth from lower levels of study to higher levels. The rationale of studying academic performance in the context of technology adoption is to present a significant relationship that exists between the two variables.

Review of literature :

R. Raja*, P. C. Nagasubramani Department of Pedagogical Sciences, Tamilnadu Teachers Education University,Karapakkam, Chennai - 600 097, Tamil Nadu, India : Technology is a gift of God. After the gift of life it is perhaps the greatest of God's gifts. It is the mother of civilizations, of arts and of sciences. Technology has certainly changed the way we live. It has impacted different facets of life and redefined living. Undoubtedly, technology plays an important role in every sphere of life. Several manual tasks can be automated, thanks to technology. Also, many complex and critical processes can be carried out with ease and greater efficiency with the help of modern technology. Thanks to the application of technology, living has changed and it has changed for better. Technology has revolutionized the field of education. The importance of technology in schools cannot be ignored. In fact, with the onset of computers in education, it has become easier for teachers to impart knowledge and for students to acquire it. The use of technology has made the process of teaching and learning all the more enjoyable.

Benjamin herold (2016) technology is everywhere in education : public schools in the united states now provide atleast one computer for every five students. They spend more than 3 bilion per year on digital content. Led by the federal government, the country is in the midst of a massive effort to make affordable high speed internet and free online teaching resources available to even the most rural and remote schools. And in 2015-16, for the first time, more state standardized tests for the elementary and middle grades will be administered via technology than by paper and pencil.

Sample size and sampling techniques :

The study engaged respondents from ten schools, namely, Morarji desai residential schools in davanagere district had fully adopted Technology in the educational processes, were in the process of adopting the technology in their system. The study encompasses a sample size of 300 respondents, average 30 students from each school. The students were grouped into two categories of male and female for the case of data analysis. The purposive sampling technique assisted in getting a personal bias-free data because the respondents were interested to participate in the study. Difficulties arose in an attempt to administer the questionnaires as well as hold faculty interviews as both data collection methods were time-consuming, and the schools were also geographically apart at long distances.

Table 1 : Impact of technology on students achievement and teaching effectiveness:

Respondents	**Frequency**		**Percentage %**
	N	**n**	
Students	425	300	70.58
Teachers	102	20	19.60
Students opinion & Academic performance of students n = 300			

Indecators	Frequency		Percentage %
	N	n	
Students academic performance	300	248	82.66
Technology/Computer utilization in teaching by the Teachers	20	16	80.00

With the above table residential school students have a mean average of 82.66 which has the interpretation of academic achievement/performance and Teachers were utilize technology like computer to their teaching activities 80.00 of teachers said it useful to students academic performance. Since the locale of the study included residential schools in Davangere district. Thousands of students, sample random sampling was used in determining the respondents of the study the selection of sample size was done using the Z-test and computed as follows.

n = sample size N = population e = margin of error (.05)

This study further utilized quote sampling in the determination of the number of respondents per school. Specifically 10% was sent to determine the number of respondents. A total of 20 population of 102 teachers from the Morarji desai residential schools were identified as the sample size table 1 presents the distribution. Table 2 : distribution of teacher respondents from residential schools in davanagere.

Taluks	Schools	Teachers	
		N	n
Channagiri	MDRS Kerebilachi	10	02
	MDRS Kariganuru	10	02
Harihara	MDRS Nandigudi	09	02
	MDRS Kondajji	08	02
Honnali	MDRS Kannanayakanahalli	12	02
	MDRS Najeer nagara	09	02
Davanagere	MDRS Vaderhalli	10	02
	MDRS Devara belakere	10	02
Nyamathi	MDRS Madanabaavi	12	02
Jagaluru	MDRS Bilichodu	12	02
TOTAL		**102**	**20**

Out of 425 10th class student enrolled in Morarji desai residential schools in Davanagere district. 300 students served as the sample size this is 70.58 % of the total population. Table presents the distribution of student respondents.

Table 3 : distribution of students respondents according to secondary level.

Taluks	Schools	Students	
		N	n
Channagiri	MDRS Kerebilachi	33	28
	MDRS Kariganuru	52	40

Harihara	MDRS Nandigudi	40	30
	MDRS Kondajji	44	30
Honnali	MDRS Kannanayakanahalli	43	30
	MDRS Najeer nagara	42	30
Davanagere	MDRS Vaderhalli	35	20
	MDRS Devara belakere	48	30
Nyamathi	MDRS Madanabaavi	40	30
Jagaluru	MDRS Bilichodu	48	32
TOTAL		**425**	**300**

The data gathering instruments were reproduced to the student-respondents. Students from the sixth taluks of the Davanagere. From students of 10th classes were asked fill-out questionnaire with the approved and assistance of their respective advisers.

Let us assume that no of students denotes X_1 & no of computers denotes X_2. H_0 = there is no relationship between no of computer & no of students learned in Morarji desai residential schools. H_1 = there is no significant relationship between no of students & no of computers in Morarji desai residential schools.

Si no	Number of students	Number of computers
1	28	40
2	40	15
3	30	12
4	30	05
5	30	04
6	30	05
7	20	05
8	30	26
9	30	32
10	32	66
TOTAL	**300**	**255**

Z- Test $Z = \dfrac{\ddot{X}_1 - \ddot{X}_2}{\sqrt{\sigma p1 + \sigma p1}\ \text{----------}\ N1 + n2}$ $\ddot{X}_1 = 300$ $\ddot{X}_2 = 255$

$= \dfrac{}{\text{----- = 30}} = \dfrac{}{\text{------ = 25.5}} =$ **Z-test = 2.786**

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Inferences : The calculate value is more than table value , hence null hypothesis is rejected and we say that the computer used by students and government providing technology aspects are very good. So selecting alternative hypothesis that there is relationship between number of students & number of computers in Morarji desai residential schools.(Z-test value =2.786).

Significance of the study : The study shall serve as a guide for the designers and implementers of school regulations, The findings of this research will help teachers understand the present students behavior

in using computers, making students of their behavior would help them make better decisions and become responsible for their actions. When they realize the extent of their computer use and its influence on their achievements. erted the responses of the respondents in to numerical data.

Data Collection Tools and Instruments

This study has made use of a close-ended questionnaire in order to collect data from selected schools students who had access to technology applications. The data from the teachers were collected thorough an interview with open and closed ended questions conducted on-site.

Data Analysis : After the completion of data collection, the researcher analyzed the data to check whether there were identifiable errors, inconsistencies, and incompleteness. Structural equation modelling Z-test technique was used to measure the extent of schools adoption of technology and the impact that this adoption had on the academic performance of students. The Z-test application was used to establish the significant variations in the moderating variables that influenced students' academic performance in each category of respondents .

Recommendations and conclusion : The findings of this study shall prove useful to the schools administration and other parties involved in framing technology policies for secondary education. This study can be used as a reference point to understand that students wishing to enroll for a course in a school finalizes his or her decision based on the level of technology application present in that schools . Last but not least, this study will also act as a jump-start for other researchers who may like to conduct further research on this topic in future. technology is among the latest innovations that has revolutionized various operations in the world . It is particularly important in the field of education since it has recently created such platforms and opportunities that have facilitated to some extent the acquisition of knowledge. This phenomenon has been highlighted in this study which indicates how students view technology as a component of their study program. From the results of the questionnaire, it has been evident that a majority of the respondents value technology, and each of them feels that they should have the gadgets to be able to adopt technology more closely.

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