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THE ROLE OF COMPUTER LITERACY IN TEACHING EFFICIENCY AT SECONDARY LEVEL IN DISTRICT MUZAFFARGARH

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ABSTRACT

This study employs a descriptive survey design to investigate the role of computer literacy in teaching efficiency at secondary level in District Muzaffargarh. The research aims to explore the current level of computer literacy, examine its relationship with teaching efficiency, identify challenges, purpose or solutions for improvement, evaluate existing training programs, and assess the impact on student outcomes. The population includes all male and female secondary school teachers in the district Muzaffargarh, with a sample of 460 teachers selected from 23 schools. A questionnaire, validated by experts and refined through a pilot study, serves as the research instrument. Reliability analysis ensures the consistency of the scale. Data collected through surveys were analyzed using descriptive and inferential statistical techniques. Findings results show that computer literacy and teaching effectiveness are positively correlated, emphasizing the crucial role of digital competencies. The study identifies challenges and proposes recommendations for improvement, evaluates the effectiveness of training programs, and explores their impact on student outcomes. The research contributes to a deeper understanding of the dynamics between computer literacy and teaching efficiency, providing a basis for targeted interventions and professional development initiatives. This study emphasizes the importance of cultivating digital competencies among secondary school teachers to enhance educational practices in District Muzaffargarh.

Keywords: Computer Literacy; Teaching efficiency; Secondary level.

INTRODUCTION

Computer literacy is the understanding of computational powers and the capacity to identify and articulate the approach to issues that may be resolved by computer technology. The science and aptitude of using computers and information technology is known as computer literacy. Preferably, computer literacy also refers to the extent that people are able to utilize computer applications and other computer-related features (Wiliam, 2016).

The contents of the country's educational courses have been created with the intention of teaching computer skills. This was put into practice in recent years with the overhaul of the educational system and the creation and assembly of brand-new sixth-grade basic textbooks educational institution. Work and Technology is a book, the first section of which is around sixty pages long and covers computer literacy instruction in general. Thus, based on the topics and information gathered in the book chapters, schools must be intelligent, furnished with a computer site and linked to the internet at the very least and hold skill-building programs computer-managed instruction (CMI), and computer-assisted instruction (CAI), is thoroughly described by (Bhalla, 2013), in both instruction and the administration of the teaching and learning process (ministry of Education, 2021).

Numerous technology projects have been implemented in schools all around the world as a consequence of the need to incorporate technology into the classroom in order to satisfy the needs of today's educators and students. But it has soon become evident that providing instructors and pupils with a computer as technology alone is insufficient

to guarantee the meaningful teaching and learning through the use of computers in the classroom (Mlyakado, 2019). Because technological efforts and advancements have occurred so swiftly, our comprehension of the challenges and opportunities for successful computer integration in the classroom and the impact of its adoption on student performance are still being determined. In educational institutions, administrative tasks are often completed using computers. Teachers may, for instance, provide student reports in the form of enormous bundles of papers rather than using handwritten ones. Create computer reports and securely distribute them via the internet to parents and other interested parties (Hennessy & Brindley, 2015).

Education has a crucial role in the 21st century in assuring students' capacity for learning, innovation, and effective use of technology and information media (Thomas, M., & Jones, A. 2010). Education professionals have a challenge in preparing exceptional pupils to compete worldwide. Organizations should change to fit the needs of the twenty-first century. This is consistent with the Partnership Declaration for 21st Century Learning, which aims to foster the development of a variety of 21st century competencies, such as teamwork, communication, Indonesia is placed 62 out of 70 nations in terms of literacy according to the 2019 PISA (Program for International Student Assessment) report. These figures demonstrate how illiterate Indonesians are. According to Obakhume, A. S. A. (2012), the simplest definition of literacy is the capacity for both reading and writing. According to the National Institute for Literacy, literacy skills include the capacity to find solutions in tasks like speaking, writing, reading, and computing as well as navigating the demands of the workplace and society. Literacy, as defined by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) is the capacity to read and write, independent of the method or person who possesses it. According to PISA, a student's capacity to solve, comprehend reason, analyze, and articulate a variety of mathematical issues well is what constitutes numerical competence. Literacy is defined as more than just the capacity to read and write, which has a slightly larger definition (Han & Xu, 2020).

The foundation of any country is its teachers. Because of the great and significant contributions teachers make to the nation's development, their community plays a major role in its success and growth. Every member of society has been shaped and made possible by their extraordinary efforts. Teachers' quality impacts the quality of instruction they provide (Kareem & Ravi rot, 2014).Because of this, educators are seen as being absolutely necessary and indispensable to every educational system. They are called the individuals who give instructions for the teaching and learning process. According to Kadesh (2011) teachers constitute the backbone of the educational system. Numerous factors influence the academic performance of kids "Teaching Effectiveness" is one of the most important Teacher-related Variables or Factors that greatly enhances students' academic progress.

The national policy on education states that secondary education is the education that students get after elementary school but before higher education. The National Policy on Education lists higher education and preparing the person for a productive life in society as the two main objectives of secondary education. The goals are to provide all primary school graduates with the opportunity to pursue higher education, regardless of their gender, socioeconomic status, religion, or racial background. Since the use of information and communication technology (ICT) is essential to all human efforts, particularly in the field of education, educational institutions all over the globe have been completely integrated with ICT. There is no denying that ICTs have influenced education research, teaching, and learning. Teachers everywhere are extremely concerned about the usage of computers and online technologies in the classroom (Abbott, A. P.,et ,al 2007) claim that by utilizing ICT for lesson preparation, instruction delivery, and teaching and learning assessment, senior secondary school teachers' workloads may be reduced.

Literature Review

The concept of information literacy was first put forth in 1974 by Paul Zurko ski, the chairman of the American Society for Information Science and the American Library Association. According to (Donnelly, D. 2011) information literacy is the capacity to apply information resources to work and acquire pertinent skills in order to solve problems. The perspective and everyday capacity to read and use information were all closely associated with functional literacy. Personal information requirements, as well as the capacity to actively seek

information in order to make decisions, pick up new skills, and acquire new technologies. The concept of information literacy suggested using computers or libraries to effectively search for necessary information (Adam, 2014).

To create students who are digitally literate, teacher education has often prioritized technical abilities in using digital tools and systems that are considered acceptable for educational contexts and figuring out how to apply them within certain units. Regarding education (Aitokhuehi, J. O., & Ojogho, J. 2014). This strategy is predicated on the idea that doing so "equips preservice teachers with a set of basic competencies they can transfer to their future classroom practice" But critics have attacked these methods.

Due to their inefficient, reductive design, lack of authenticity, inability to consider various sociocultural settings for technology usage, and limited skill emphasis. The emphasis on digital literacy that is now placed on skills has been challenged by more recent research, which suggests rethinking the program's goals for teacher education. be dropped in favor of more inclusive models of digital competency that take into account the wider range of skills, knowledge, and attitudes that aspiring educators will require.Role-playing is a popular and successful method for teaching student's human relations skills and resolving interpersonal conflicts in the classroom (Ntorukiri, T. 2020). By combining historical and literary texts with contemporary or historical Things that happen, it is also utilized to support subject-matter learning. Students might clarify their expectations from the role-play by having a vivid dispute and explaining how they relate to others. Society, their personal assessment, and the manner in which academic content is necessary to finish daily tasks (Adekola, B. 2006). Universities that offer higher education use it to encourage learning and foster improved understanding amongst other students, faculty members, and administration through the presentation of domestic and global content.

The challenges they face and giving them the freedom to try out novel tactics and policies (Al-dhabi, 2011). problem-solving opportunities for other students, staff, and administration by putting local and international issues in front of them and giving them the freedom to try out different tactics. Technology becomes an essential teaching and learning tool when it is incorporated into curriculum, instructional materials, and technology itself through information technology integrated education. It can be said that information technology is used as a method or process to seek for issue solutions whenever and wherever needed. The procedure for putting a new evaluation method into practice requires extensive planning since pupils must be made aware of the new technique of evaluation. This calls for defining the proper duties and role expectations for pupils as well as explaining them to them group size. Students must be for the implementation to be successful Permitted to express their choices on individuals in the group (HONG, S. W. 2013).

It is essential to clarify that the lecturer will be giving marks in addition to offering comments, with the observers only being able to do that. The inclusion of marks in this evaluation approach is crucial because it encourages students to take their work seriously and prepares them for duties that will be required of them in the workplace in the future. After finishing, pupils must fill out an assessment form. Utilizing various techniques for learning Speaking in the target language has grown to be an essential practice for those who are motivated to learn a particular language. Education officials, educators, parents, community members, and even student populations have long debated the issue of accountability in the classroom. "Accountability" is being accountable and having to answer for one's actions, according to the Oxford Dictionary and Thesaurus. Responsible for the deeds they commit. The definition of accountability given by the United Nations Development Programmed (UNDP) is carrying out tasks in compliance with established guidelines and standards and truthfully and fairly reporting responsibilities, plans, and performance outcomes.

In the classroom, there has been a similar shift that benefits the kids who are more tech-savvy. It is a fair assumption to make that teachers who are more proficient with technology will make greater use of these skills when teaching. However, digital literacy is much more than just this fundamental idea. A fundamental responsibility of teachers is to study and teach digital literacy, given the growing emphasis on globalization and information technology, as well as the digitization of many main departments in the classroom. This has a number of advantages for both students and teachers, one of which is that it keeps teachers abreast of global trends

by keeping them current on the newest and most pertinent information. This might assist educators in teaching students about the most recent advancements in science and technology (Odera, F. Y. 2011).

Statement of Problem

Secondary school curricula are only one area where computer use is evident in human activity. Teachers must be computer educated, though, as computers are used extensively in the educational sector. The data indicates that a significant number of educators are reluctant to possess computer literacy skills and view computers as a universal device. In addition to instructors' effectiveness, computer literacy is shown by the availability, use, and content competence of computers in the classroom. This study was conducted on "The role of computer literacy in teaching efficiency at secondary level in district Muzaffargarh.

Objectives of the study

Objectives of this study were given below:

- To find out the current level of computer literacy among secondary school teachers.
- To explore the current level of teaching efficiency among secondary school teachers
- To examine the relationship between computer literacy and teaching efficiency.
- To identify the relationship between computer literacy and teaching efficiency with respect to their demographic variables.

Research Hypothesis

Hypothesis of the study were given below:

Ho 1: There is no current level of computer literacy among secondary level teachers.

Ho 2: There is no current level of teaching efficiency among secondary school teachers

Ho 3: There is no relationship between computer literacy and teaching efficiency.

Ho 4: There is no relationship between computer literacy and teaching efficiency with respect to their demographic variables

Research Methodology

The methodology for conducting this investigation has been descriptive by design and focused on investigating the impact of computer literacy on teaching efficiency at the secondary level. The objective of this part is to elucidate and rationalize the research approach chosen by the researcher for this study.

Research Design

This study was carried out using a survey design by researchers. The study was descriptive in nature, and quantitative data analysis was carried out. The statistical tool for social science SPSS was used to analyze the questionnaire statistically.

Population of the Study

All male 1072 and female 1002 secondary school teachers in the Muzaffargarh district made up the study's population. At the district level, there are 23 schools for men and women.

Sample and sampling Technique

First of all schools 11Male and 12 Female schools were selected. After school selection 20 teachers from each school were selected randomly. So, total sample of the study was 460 teachers selected from 23 school teacher from district Muzaffargarh.

Instrument Development

The study was descriptive in nature. Therefore, the data was gathered using the questionnaire as a tool. The investigator conducted a thorough study of the literature i.e. (HakiElimu, 2018; Majid, 2020) and research tool was then formed. The questionnaire was created by the researcher using a 5-point Likert scale. Total statement for questionnaire were 35.

Validation of the Tool

To assess the validity of the research instrument (questionnaire) used in the study, researcher sought assistance from a panel of experts to identify any shortcomings and strengths of the questionnaire and make necessary improvements to the tool. The experts enhanced the tool's statements by improving their format and phrasing and organized them into a coherent sequence. The researcher received comments from the specialists and finalized a tool that was straightforward and comprehensible for the responders

Reliability of the Tool

Reliability analysis evaluates the scale's dependability based on the connections between its individual items. It shows how the statements are consistent with one another. The scale's reliability was determined using Cronbach's Alpha.

Pilot study

Additionally, the researcher completed a pilot study using the questionnaire as a research tool. Twenty-three male and female secondary school teachers were included in the study's sample, the researcher give them a research instrument. The reliability of the scale was assessed using Cronbach's Alpha, resulting in a rating of .877.

Data Analysis

The statistical package for social sciences (SPSS version 23) was used to arrange, formulate and input the data once the data gathering procedure was complete. The data were analyzed using both descriptive and inferential statistical approaches. Mean, standard, percentages, and frequencies Deviation was utilized as a descriptive statistic, while the one-way ANOVA and independent samples t-test were used as inferential statistical methods.

Table Factor Matrix using Pearson's Coefficient Correlation Method

		Computer Literacy	*Teaching Efficiency*
Computer Literacy	***Pearson Correlation***	***1***	***.489*****
	Sig. (2-tailed)		***.000***
	N	***460***	***460***
Teaching Efficiency	***Pearson Correlation***	***.489*****	***1***
	Sig. (2-tailed)	***.000***	
	N	***460***	***460***

** Correlation is significant at the 0.01 level (2-tailed)

The correlation matrix using Pearson's coefficient correlation method reveals a significant positive correlation ($r = 0.489$, $p < 0.01$, $N = 460$) between Computer Literacy and Teaching Efficiency. This indicates that as individuals' levels of computer literacy increase, their teaching efficiency tends to improve as well, and vice versa. The statistically significant correlation suggests that this relationship is not due to random chance. This insight underscores the importance of integrating technology skills into educational practices to potentially enhance teaching effectiveness.

Gender-wise Analysis using independent sample t-test.

Scale	Gender	N	Mean	SD	Df	*T*	p.value
Computer Literacy	**Male**	218	74.67	5.169	458	.450	.653
	Female	242	74.45	5.495			
Teaching Efficiency	**Male**	218	83.71	6.033	458	1.094	.274
	Female	242	83.00	7.558			

This table displays that mean scores and standard deviations for Computer Literacy and Teaching Efficiency among male and female participants. There is a marginal difference in Computer Literacy between males ($M = 74.67$, $SD = 5.169$) and females ($M = 74.45$, $SD = 5.495$), with a non-significant t-value ($t = 0.450$, $p = 0.653$), indicating that gender does not significantly influence computer literacy levels. Similarly, for Teaching Efficiency, there is a slight disparity between males ($M = 83.71$, $SD = 6.033$) and females ($M = 83.00$, $SD = 7.558$), but again, this difference is not statistically significant ($t = 1.094$, $p = 0.274$). Therefore, based on this data, gender does not appear to have a significant impact on either Computer Literacy or Teaching Efficiency. Overall, these findings suggest that in this sample, both male and female participants exhibit similar levels of computer literacy and teaching efficiency, highlighting gender neutrality in these domains within the context of this study.

Area-Wise Analysis T.TEST

Table Residential Area-wise Analysis using Independent Sample t-test

Scale	Area	N	Mean	SD	Df	*T*	p.value
Computer Literacy	**Urban**	181	73.47	5.64	458	-3.557	.000
	Rural	279	75.26	5.01			
Teaching Efficiency	**Urban**	181	82.37	7.67	458	-2.452	.015
	Rural	279	83.97	6.24			

This table presents an analysis comparing Computer Literacy and Teaching Efficiency scores between participants from urban and rural areas using independent sample t-tests. It reveals that there are statistically significant differences in mean scores between urban and rural areas for both Computer Literacy (t = -3.557, p = .000) and Teaching Efficiency (t = -2.452, p = .015). Specifically, individuals from rural areas tend to have higher mean scores for both Computer Literacy (M = 75.26) and Teaching Efficiency (M = 83.97) compared to those from urban areas (Computer Literacy: M = 73.47, Teaching Efficiency: M = 82.37). This suggests that individuals residing in rural areas exhibit slightly higher levels of computer literacy and teaching efficiency than their urban counterparts. In conclusion, the findings indicate a significant difference in computer literacy and teaching efficiency based on residential area, with rural residents showing a slight advantage over urban residents in both domains.

Subject-Wise Analysis T.TEST

Table Subject-wise Analysis using Independent Sample t-test

Scale	Subject	N	Mean	SD	Df	T	p.value
Computer Literacy	**Science**	181	75.22	4.810	457	2.133	.033
	Arts	278	74.13	5.632			
Teaching Efficiency	**Science**	181	85.09	5.848	457	2.204	.028
	Arts	278	82.19	7.270			

This table presents a subject-wise analysis comparing computer literacy and teaching efficiency scores between students specializing in Science and Arts subjects using independent sample t-tests. It reveals that there are statistically significant differences in mean scores for both computer literacy (t = 2.133, p = .033) and teaching efficiency (t = 2.204, p = .028) between Science and Arts Teacher. Specifically, Science students tend to have higher mean scores in both computer literacy (M = 75.22) and teaching efficiency (M = 85.09) compared to Arts Teacher (Computer Literacy: M = 74.13, Teaching Efficiency: M = 82.19). This suggests that students studying Science subjects may have a slight advantage in terms of computer skills and teaching effectiveness compared to their counterparts in Arts subjects. In conclusion, the data indicates a significant disparity between Science and Arts students in terms of computer literacy and teaching efficiency, potentially reflecting differences in curriculum emphasis or educational approaches between the two disciplines.

ANOVA TEST Table

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
Name of institution	Between Groups	21.186	37	.573	2.489	.000
	Within Groups	97.075	422	.230		
	Total	118.261	459			
Subject	Between Groups	15.095	37	.408	1.785	.004
	Within Groups	96.471	422	.229		

	Total	111.565	459			
Qualification	Between Groups	84.158	37	2.275	1.978	.001
	Within Groups	485.225	422	1.150		
	Total	569.383	459			
Designation	Between Groups	58.639	37	1.585	1.246	.158
	Within Groups	536.706	422	1.272		
	Total	595.346	459			
Teaching experience	Between Groups	107.893	37	2.916	2.297	.000
	Within Groups	535.681	422	1.269		
	Total	643.574	459			

This table displays the results of an analysis of variance (ANOVA) for different factors, including institution, Subject, Qualification, Designation, and Teaching experience. It reveals significant differences among groups for Name of institution (F = 2.489, p = .000), Subject (F = 1.785, p = .004), Qualification (F = 1.978, p = .001), and Teaching experience (F = 2.297, p = .000). This indicates that these factors have a statistically significant impact on the outcome measures being studied. However, for Designation, the difference among groups is not significant (F = 1.246, p = .158). In conclusion, the results suggest that factors such as institution name, subject, qualification, and teaching experience significantly influence the outcomes being measured, whereas designation does not seem to have a significant effect.

Table Frequency Distribution of Computer Literacy Scale

N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
460	61.00	84.00	74.5609	5.33891	-.322	.114	-.850	.227
460								

This table provides a comprehensive overview of the computer literacy scores among a sample of 460 individuals. With an average score of 74.5609 out of 100 and a relatively narrow spread indicated by a standard deviation of 5.33891, it appears that, on average, the sampled population possesses a moderate to high level of computer literacy. The negative skewness (-0.322) suggests that more individuals scored higher on the scale, indicating a generally proficient level of computer skills within the group. Additionally, the slightly platykurtic distribution (kurtosis = 0.114) implies that extreme scores are less common. In conclusion, based on this data, it can be inferred that the reveal a satisfactory level of computer literacy, with a majority scoring relatively well on the scale.

Table Frequency Distribution of Teaching efficiency Scale

N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
460	72.00	90.00	83.3413	6.87983	-.607	.114	-1.083	.227
460								

This table presents the frequency distribution of scores on a Teaching Efficiency Scale for a sample of 460 individuals. The scores range from 72 to 90, with an average score of 83.3413 and a standard deviation of 6.87983, indicating a generally high level of teaching efficiency within the sample. The negative skewness (-0.607) suggests that more individuals scored higher on the scale, implying a predominantly proficient level of teaching effectiveness among the group. Overall, these statistics indicate a strong level of teaching efficiency within the sampled population, with a majority exhibiting high scores on the scale.

Conclusion

The study's conclusions closely match the original goals, offering a thorough picture of the present level of computer literacy among secondary-level teachers in District Muzaffargarh. The average lies around the center, with a moderate amount of variability.

The correlation coefficient of .489 indicates a moderate to strong positive relationship between these two variables. The independent sample t-tests conducted to compare computer literacy and teaching efficiency between males and females reveal no significant differences based on gender. For computer literacy, the t-test yielded a non-significant result indicating that there is no statistically significant disparity in computer literacy scores between males and females. Similarly, for teaching efficiency, the t-test also produced a non-significant result .suggesting that there is no significant variance in teaching efficiency scores between males and females. The analysis using independent sample t-tests for residential area-wise comparison

The t-test result indicates a significant difference between urban and rural areas in terms of computer literacy. The t-test result indicates a significant difference between urban and rural areas in terms of teaching efficiency. The analysis that residents of rural areas tend to have higher computer literacy and teaching efficiency compared to those in urban areas.

The independent sample t-tests comparing subjects, the t-test shows a significant difference between Science and Arts in terms of computer literacy. The t-test also shows a significant difference between Science and Arts in terms of teaching efficiency. In summary, teacher in the Science field tend to have higher scores in both computer literacy and teaching efficiency compared to teacher in the Arts field.

Discussion

There following objectives of the study to investigate the current level of computer literacy among secondary school teachers. To explore the current level of teaching efficiency among secondary school teachers to examine the relationship between computer literacy and teaching efficiency. To identify the relationship between computer literacy and teaching efficiency with respect to their demographic variables.

One of the results from present study shows that impact on student outcomes was explicitly measured, the positive correlations found between computer literacy and teaching efficiency imply a potential indirect influence on student outcomes and enhancing teacher computer literacy to create a more conducive learning environment. Similarly, (Stockleben, B., et,al 2017) positive relationship is challenging task because teachers always receive the necessary resources, capacity building training, motivation from the experienced teachers & school leaders, and information.

Another result of the present study revealed that computer literacy among secondary-level teachers, establishing a significant correlation between computer literacy and teaching efficiency, and laying the groundwork for identifying challenges and proposing interventions to enhance digital skills within the teaching community. Similarly, find that there is a need for teacher preparation programs to encourage courses that will especially help preservice science instructors and to acquaint students with some aspect of computer use. These focused courses would help these students catch up on their science ideas, boost their computer self-efficacy, and develop their talents, which might improve how well they integrate computer technology into their teachings once they begin teaching. On that other hand, Jack (2010) find that the teachers were computer literate but did not use their computer literacy knowledge in the teaching process rather personal use such as self-development and subject taught advancement purposes.

Recommendations

According to the results of the study following recommendations may be suggested:

1. To address the unique needs found in the study, specialized computer literacy training programs that emphasize boosting computer confidence, advancing technical comprehension, resolving issues related to computer avoidance, etc., must be developed and put into place.
2. Training modules should be created specifically to meet the requirements of people in demographic groups who exhibit mild disagreement or difficulties, including those who shun technology. Regardless of their existing level of digital competence, all instructors should be able to benefit from the programs by means of inclusive and

accessible training. This strategy fits with the study's focus on the complexity of teachers' computer literacy.

3. Specifically investigate how teacher computer literacy affects student outcomes in other study. Examine how students' academic achievement, engagement, and digital literacy relate to instructors' proficiency with technology. The suggestion that raising teacher computer literacy might have beneficial knock-on effects on students' learning is based on the study's findings.

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