

**RESEARCH PAPER****Frequent use of Technology by Teachers and Teachers' Performance:  
A Comparative study at Higher Secondary Level****<sup>1</sup>Dr. Fahd Naveed Kausar\* <sup>2</sup>Iqra Nasir <sup>3</sup>Hira Liaqat**

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**ABSTRACT**

Teachers will be more successful and expected to use technology in the classroom if they have the resources, they need to practice using it before utilizing it in a real-world education setting, like a classroom. The study's goal was to determine whether teachers' frequent use of technology and their performance at the higher secondary level were related. This study used a quantitative descriptive research design. All of District Lahore's colleges and higher secondary schools were represented in the population. It employed a multistage sampling approach. Questionnaires were used as the study's instrument. Mean, standard deviation, Pearson r correlation and independent sample t-test was used to analyzed the data. The findings of the study showed that perceptions of students toward the level of agreement about the frequent use of technology and teachers' performance. It was recommended that the school has to include these interesting themes in their in-service training, summer training, and other ICT seminar-workshops so that students may internalize and appreciate the nature of this dimension completely.

**KEYWORDS** Technology, Teachers' Performance, Higher Secondary Level**Introduction**

By facilitating knowledge and skills development, accumulation, dissemination, adaptation, support, and acknowledgement, technology enhances student learning outcomes and teachers' professional competency. It has been proven to be a useful tool for training teachers. It was simpler for them to grasp the most up-to-date techniques for producing engaging and effective teaching and academic results the better they understood how to employ digitalization. It is a cutting-edge technology that alters the way that individuals learn (Gebremeskel, Kebede, & Chai, 2016). When technology used to encourage students' engagement in meaningful and theoretically authentic curricula, technology may be an excellent learning tool. Simply put, technology is a tool. This should be the method of instruction when it may be the best for learners. Students can benefit much from technology, which also encourages greater participation. As part of their academic curriculum, secondary school learners should start using popular digital tools. Teachers must incorporate technology into the curriculum if they want students to learn how to use it effectively and have access to more sophisticated apps that they can use autonomously as they get older (DePasquale, McNamara, & Murphy, 2003).

Technology is a valuable tool that can enhance learning in a number of ways, including by making it simpler for teachers to develop instructional components and by enabling them to acquire and cooperate in innovative ways. A fresh period of time, anywhere education is anticipated as a result of the global reach of the Internet and the number of intellectual devices that may be connected to it (Hatlevik, Throndsen, Loi, & Gudmundsdottir, 2018). The responsibility for utilizing the full potential of technology to enhance education and its impact on teachers' performance rests with professional teachers

and educational technologies, guaranteeing that everyone and everywhere has access to effective and efficient education (Brown & Warschauer, 2006). Technology creates new opportunities for addressing challenges with teachers' mindsets and related guidelines, along with issues with learning elegances, student-centered education, and take longer to heal inspirations. It does, however, frequently make it difficult for teachers to properly incorporate technology into their lesson plans and curricula. Due to the vagueness, technology is substituted for other accoutrements in traditional training rather than new types and tutoring strategies ( Judson, Dhruva, & Redberg, 2019).

Teachers are receiving training on how to use technology to strengthen their pedagogical skills and subject-matter expertise. Teachers that stay current with technology can create lesson plans that was improve teaching and learning. Technology is used in the classroom by teachers to engage students and broaden their knowledge. Frequently utilizing technology in the classroom helps teachers better grasp their conceptual understanding and engage students (Reynolds, 2016). Teachers are encouraged to integrate computer technology into their lessons for a variety of reasons. These comprise computer self-efficacy, individual technology usage, optimistic teacher technological conceits, and acceptance of specialized computer technology development. These elements all play a part in motivating teachers to use technology. If technology is used in the classroom in conjunction with appropriate educational theories and models, teachers may find it useful (Sabzian, Gilakjani, and Sodouri 2013).

Without a doubt, having a functional understanding of technology aids teachers in staying current on how to employ cutting-edge instructional devices in the classroom. Nowadays, technology is a simple necessity for living in the modern world; no industry can run well without it. Technology can help teachers become more effective. Effects of technology on how instruction is delivered, how teachers are evaluated, how effective teaching and learning processes are measured, and how students perform (Buckley, Adams, Aribilola, Arshad, Azeem, Bracken,, ... & Zhang, 2022). If teachers are to use technology in the classroom to meet the demands of the modern world, they must possess extensive technological knowledge and professional skills. A teacher's philosophy of teaching, ideas about the course and the current circumstance, subject expertise, management and organizational abilities, personal qualities, and opportunity to adapt and settings are only a few of the many variables that influence learning, influence how well a teacher performs in instruction and other learning environments. Information and communication technology had a major impact on the majority of these elements (Fazlalizadeh, Naderi, & Naraghi, 2015).

The use of classroom's technology is an appropriate and useful way to teach students and help them to develop the skills they will need to succeed in the real world. Teachers prepare lessons and present them in class using technology to increase their efficacy. The use of technology for lesson preparation typically takes the form of the following. Teachers use the internet to compile pertinent resources, write word processing drills, and make PPTs. Contrary, PowerPoint presentations are widely used in classrooms. Teachers utilize the internet to supplement their teachings. Additionally, word processor is employed in writing sessions, and voice footage is infrequently castoff to record exhibitions by students or to perfect teachers' pronunciation (Oko and Uwatt, 2015). Regular use of technology by teachers and performance are strongly correlated.

To improve students' learning, teachers employ computers, LCDs, projectors, laptops, multimedia, smart phones, and other educational technology in the classroom (Bhattacharjee & Deb, 2016). A teacher's effectiveness is characterized as a group of attitudes and actions that promote student learning. We grade the teacher's performance as the students learn more (Che, & Zhang, 2018). Technology could aid in teacher performance and learning throughout class enactment by actually providing feedback, such as software glitch coaching, or by providing insight into general and individual students' performance

through improved reports of (aggregated) students' learning. Examples of reflection tools include apps that let teachers get feedback from students on their classes or methods for analyzing videos to assess what happened in the classroom. There is a glaring lack of a thorough study of such materials. Technologies for improving teacher effectiveness and learning are currently being developed (McKenney and Visscher, 2019).

### **Socioeconomic / Rational /Practical & Scientific Applications**

This knowledge can be used by teachers to promote flexible thinking and show pupils the importance of adapting their approaches to various challenges. The responsibilities of teachers and pupils have started to change as a result of technological advancements. This study has the potential to have a substantial impact on instruction in a number of ways, including by making it simpler for people to comprehend instructional materials and by enabling them to participate and learn in unique ways. In both the public and private sectors, the value of technology was evaluated using the findings.

Studies show that teachers' effectiveness is significantly impacted by their constant use of technology. The relationship between educational technology and student performance, the use of technology by teachers and students within and outside of the classroom, and the readiness of teachers to use technology in the classroom have all been the subject of several studies. According to Thakral (2015), developing a new generation of teachers capable of utilizing a variety of technology and tools in all phases of academic, administrative, research, and promotion responsibilities has proven challenging for teachers and teacher education institutions. Technology is incredibly helpful to teachers and helps them be more productive. The researcher, however, was unable to find any studies that looked at the relationship between teachers' frequent use of technology and their performance at the secondary level. Further investigation is needed into the connection between teachers' frequent use of technology and their effectiveness as teachers at the higher secondary level in order to close the gap between students' learning and teachers' instruction. By conducting research in Pakistan to acquire data, the research aims to address this informational gap.

### **Material and Methods**

The research has a quantitative and descriptive approach. All higher secondary schools and colleges, both public and private, made up the population. There are 216 higher secondary schools and colleges in total, 79 of which are public higher secondary schools and colleges and 137 of which are private (HED, 2022). The study should take a significant sample of both teachers and students. The sample was acquired using a multistage sampling method. First, the researcher distinguished two strata (public/private) using the stratified sample technique. The researcher used the cluster sampling technique to divide the whole population into five clusters (Tehsils). 6 private and 3 public higher secondary schools and colleges were picked from each cluster using simple random sampling. Data were supplied by 45 higher secondary schools and colleges in total. 20 students from each public and 10 students from each private were selected using a simple random sample technique.

### **Research Instrument**

Questionnaires were the study's primary tool. Data collection methods involved using the use of technology in the classroom questionnaire developed by Mailizar (2018) and the teachers' performance questionnaire developed by Moreno-Murcia, Torregrosa, and Pedreo (2015).

### **Data analysis and Interpretations**

Mean, standard deviation, Pearson r correlation technique, and independent sample t-test were used to find the answer of research questions.

## Results and Discussion

**Table 1**  
**Sample description on the basis of mean and standard deviation**

	N	Mean	Std. Deviation
Frequent use of Technology by Teacher	600	3.6617	.56145
Teachers' Performance	600	3.6895	.59675

The sample description based on mean and standard deviation is shown in the above table. The frequent use of technology M= 3.66 and S.D=0.561. The teachers' performance M= 3.68 and S.D=0.596.

**Table 2**  
**Students' perceptions regarding the use of technology in classroom**

Items	M	S.D
When using technology in the classroom, my teacher was well-versed in the subject.	3.58	1.096
When preparing lessons using technology, the teacher is eager to read literature on teaching and learning.	3.86	1.055
When using various pieces of technology, the teacher takes the time to address the students' questions.	4.08	1.094
Using technology in the classroom allows the teacher to remain updated.	3.84	1.152
Before entering the classroom, the teacher carefully plans what to teach using Microsoft World or PowerPoint.	3.74	1.063
Through tutorials, emails, etc., the teacher is accessible to the students for inquiries and consultations.	3.85	1.084
When my teacher employed technology in the classroom, they were always respected by their peers and students.	3.77	1.083
Through the employment of various technological components, the teacher has positive relationships with both the parents and the students.	3.69	1.129
When a teacher uses technology in the classroom, they continue to motivate them and make extra attempts to help them grow.	3.71	1.180
When a teacher uses technology, he or she sets priorities and concentrates on what is most crucial to the lesson.	3.73	1.044
When doing a PowerPoint presentation, the teacher is assured and comfortable.	3.83	1.135
The teacher can effectively communicate when using various pieces of technology in the classroom.	3.87	1.026
All across the usage of technology in the classroom, the teacher stays true to his or her commitments.	3.65	1.153
While students use technology, the teacher is fully engaged.	3.76	1.065
When students exhibit interest while the teacher is using technology, the teacher takes the time to acknowledge and thank them.	4.02	1.042
When a teacher uses technology in the classroom, they are self-assured and willing to take on any assignment.	3.59	1.225
My teacher always displays excitement in all of his or her work when using technology in the classroom.	3.80	1.079
When using technology, the teacher had good control over the class.	3.68	1.119
When a teacher uses technology in the classroom, they become more creative and develop leadership skills.	3.64	1.124

The association between teachers' performance and their frequent usage of technology is demonstrated in the above table. Students agreed that their teacher had in-depth subject knowledge when using technology in the classroom (M=3.58), that the teacher is eager to read books on teaching and learning when preparing lessons using technology (M=3.86), that the teacher takes enough time to answer questions from the students when using various forms of technology (M=4.08), and that the teacher is knowledgeable about teaching and learning in general, using technology in the classroom allows the teacher to stay up to date (M=3.84). Before entering the classroom, the teacher carefully plans what to teach using Microsoft World or PowerPoint (M=3.74), through tutorials, emails, and other means, the teacher is accessible to the students for inquiries and consultations (M=3.85), my teacher always has a good reputation among their peers and students when he or she uses technology in the classroom (M=3.77) revealed a greater degree of agreement.

However, via the use of various forms of technology, the teacher enjoys positive relationships with both the parents and the students (M=3.69). When he or she employed technology in the classroom, the teacher continued to inspire the pupils and made extra efforts for their progress (M=3.71). When utilizing technology, the teacher sets priorities and concentrates on what is most crucial to the lesson (M=3.73), when delivering a PowerPoint presentation, the teacher is at ease and confident (M=3.83), when using various forms of technology in the classroom, the teacher was able to effectively communicate (M=3.87), throughout the usage of technology in the classroom, the teacher stays true to his or her obligations (M=3.65), while pupils use technology, the teacher pays close attention (M=3.76), when students show interest while the teacher is using technology, the teacher takes the time to acknowledge them (M=4.02), the teacher is self-assured and willing to take on any task (M=3.59), and when my teacher is using technology in the classroom, he or she consistently displays enthusiasm in all of his or her work (M=3.80), the teacher is innovative and develops leadership skills when utilizing technology in the classroom (M=3.64) and the teacher has good control over his or her class when he or she employed technology (M=3.68) also revealed higher levels of agreement.

### Relationship between teachers' performance and their usage of technology frequently

**Table 3**  
*Relationship between use of technology by teachers in classroom and teachers' performance*

		Technology	Performance	M	S.D
Frequent use of Technology by teachers	Pearson Correlation	1	.677**		
	Sig. (2-tailed)		.000	3.6617	.56145
	N	600	600		
Teachers' Performance	Pearson Correlation	.677**	1		
	Sig. (2-tailed)	.000			
	N	600	600	3.6895	.59675

The association between teachers' performance at the higher secondary level and their frequent usage of technology is seen in the table. Use of technology on a regular basis (M=3.66 and S.D=0.561) and Performance of the teachers (M=3.68 and S.D=0.596). The correlational value of 0.67 indicates a substantial correlation between teachers' performance and their frequent usage of technology. Therefore, there was a highly substantial correlation between teachers' performance and their frequent use of technology.

**Table 4**  
**Difference between Public and Private Sector Students' Perceptions**

Variable	School Sector	N	Mean	Std. Deviation	t-value (df = 498)	p (α = 0.05)
Frequent use of technology by teachers and teachers' performance	Public	300	3.1976	.61751	3.856	0.000
	Private	300	3.4084	.58615		

The table shows that, at the alpha level of 0.05, there was a significant difference in how students in public and private schools perceived the link between teachers' frequent use of technology and their performance. Students from private schools were more in agreement than students from public schools (M = 3.19, S.D. = 0.61) on the link between teachers' performance and their use of technology frequently (M = 3.40, S.D. = 0.58). According to the results of an independent sampling t test,  $t(598) = 3.86$ ,  $p = 0.000$ , at alpha level 0.05, there was a significant difference between students in private and public schools with regard to the association between teachers' performance and their frequent use of technology.

## **Conclusion**

The internet is used to disseminate educational materials. It was helpful to offer information and knowledge technologies for teaching and learning. To begin with, students were actively participating in the lesson, which helped them retain more knowledge. As they gain more independence, students will then have more in-depth follow-up talks. Finally, students' comprehension of new student-centered video lectures improved, and their proficiency levels rose (Tutkun, 2011). Since technology plays such a significant role in people's daily lives, young children should begin learning how to use it. The usage of technology by teachers in higher secondary schools has led to an increase in the confidence and competency of pupils' computer abilities as they get older. Many children today have broad access to the internet at home; as a result, they felt more comfortable using technology in the classroom (Kenney, 2011). Teachers at higher secondary schools continue to engage their pupils in creating a stimulating workplace by utilizing and modelling various forms of technology.

The use of technology by teachers can increase their effectiveness, increase the learning opportunities for pupils, and promote student support and involvement. Additionally, it supports teachers' efforts to enhance their instructional strategies and personalize students' learning. Technology can boost the productivity of educational programmes, decrease the cost of physical educational resources, and increase teacher time in schools (Gudmundsdottir & Hatlevik, 2018). Teachers may not have been trained in the use of certain instruments in the workplace or as a component of their development. For teachers who wish to transition and become tech-savvy in the classroom, there are choices for professional development.

The performance of teachers and their frequent usage of technology were substantially positively correlated. Teachers who use computer technology in the classroom should get familiar with a variety of software programmes and need proper help from computer experts. Peer workshops and online message boards may inspire and assist teachers who use computer technology. The internal and external factors that can affect a teacher's teaching tactics vary widely. One of the most crucial organizational changes that all teachers must implement is the rewriting of instructional objectives (Korsnes, & Throndsen, 2021). By correcting software and hardware difficulties, ICT maintenance in institutions enables teachers to employ technology in the classroom devoid of degenerative phase. A computer specialist must be present in order to employ ICT in subject-area instruction; otherwise, teachers may run into a number of difficulties.

When teachers intervene when it would be most appropriate and impactful, technology in the classroom benefits are realized. By establishing stronger one-on-one contacts with their students, teachers can use the digital feature to track and evaluate student development and give immediate feedback, as opposed to waiting to assess student work through traditional after-school homework. Technology can help teachers save time by enabling them to customize classes for specific students when used properly (Blikstad-Balas & Davies, 2017). Teachers can focus more on teaching students how to make their own discoveries, either in agreement with or disagreement with this notion, using digital resources, rather than spending as much time lecturing. Learning becomes truly individualized when students are given the freedom to experiment with personal technology at their own pace.

## **Recommendations**

- 1) Teachers need to be more mindful of how they discuss technological issues, such as legal concerns, health concerns related to excessive use of technology, and safety considerations. So that teachers are more aware of the obstacles presented by technology, this topic should be covered in in-service training, semestral training programmes, as well as school learning action cell meetings.

- 2) Teachers should be more knowledgeable about copyright and intellectual property regulations in any technology system. The school has to include these interesting themes in their in-service training, summer training, and other ICT seminar-workshops so that students may internalized and appreciate the nature of this dimension completely.
- 3) Teachers should guarantee that technology is used in the classroom in a way that students can learn from it, both for their own benefit and the benefit of their pupils. in order for the principles of technology integration to be included into regular educational practices.

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