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Utilization of Information Communication Technology among Public and Private Secondary Schools of Karachi: *A Comparative Study*

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Abstract: *This study aimed to compare secondary school teachers from the public and private sectors in terms of their perception and understanding of Information Communication Technology (ICT). It also examined how these teachers are facilitated and trained by their respective schools. The sample size for this study was 50 teacher respondents, with 5 public and 5 private schools being selected in Malir Town. From each school, 5 respondents were chosen through simple random sampling. To analyze the data, the Statistical Packages of Social Sciences (SPSS) 20.0 was used for descriptive and inferential statistics. The data was evaluated and hypotheses were tested using an independent sample t-test. The findings indicate that secondary teachers from both public and private schools have a similar perception of ICT. However, public secondary teachers displayed a higher level of knowledge in ICT and were better supported by their respective schools compared to private schools in Malir Town.*

Key Words: ICT, Secondary School Teacher, Public School, Private School

Introduction

The Objectives of the Study

I.   To find out the perception about secondary school teachers using ICT in teaching between public and private schools.
II. To discover the knowledge and understanding of ICT possessed by secondary teachers between public and private schools.
III. To investigate how public and private schools assist secondary teachers with ICT.

The Hypotheses of the Study

I.   There is no significant difference in secondary teachers' perception of using

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ICT in teaching between public and private schools in Malir Town Karachi.

II. There is no significant difference in possessing Information Communication Technology knowledge between public secondary teachers and private secondary teachers in Malir Town Karachi.

III. There is no significant difference between public and private schools in terms of providing ICT support to secondary teachers in Malir Town Karachi.

Paper purpose

The results of the study are valuable in assisting stakeholders and relevant authorities in tackling the existing challenges encountered by public and private secondary school teachers when it comes to incorporating Information Communication Technology (ICT) into the teaching-learning process. Additionally, the research outcomes open up new avenues for future studies regarding the use of ICT in the area of activity of education.

Literature Review

Many academics have attempted to explain teaching and learning from various angles. Along with making clear the same meaning of teaching, these definitions evolved into philosophies of instruction. Teaching theories give us conceptual frameworks for understanding the process of learning and point us in the direction of actual problem-solving strategies (Alharbi, 2021). Systems of teaching are founded on theories of learning. Behaviorism and constructivism are the most prevalent and influential educational ideas. These strategies are based on two major schools of psychology that shaped modern teaching ideas and have differing views on teaching methods, pedagogical techniques, and evaluation methods. The difficulties that stop student instructors from utilizing ICT teaching and learning processes in the classroom have been examined using constructivist teaching theory. This teaching theory aids in understanding the variables that prevent

instructors from using ICT effectively in connection with those elements are effective use of technology instruction. Application constructivist 7 theory also offers guidance for further study and application. The constructivist teaching theory's effect fosters personal development and allows students to discover their teaching potential. The difficulty of using ICT in the educational process is a persistent concern for teachers. There are a few questions that are part of this issue that prevent them from employing ICT in the educational system.

Teachers' Perceptions of ICT

Information communication technology created a new learning environment for pupils that requires a unique combination of knowledge abilities used effectively. Since students must go through much more material from various sources, critical thinking, study, and evaluation abilities are crucially developed (The New Media Consortium, 2007). According to Ajzen (2022), attitude tends to be positively or adversely towards an object, person or event. (Aiken, 2020) defined point of view as cultural positions that react favourably or unfavourably to particular circumstances, ideas, or people. With a focus on the elements of the teaching process, many scholars have attempted to assess teachers' attitudes toward using ICT in the classroom. Students believe that ICTs benefit their education, but according to his research, male students accept the idea that ICTs enhance the educational process for female students. Computer accessibility and internet connectivity, he noted a certain man scholar claimed making use of computers once a day enhances study. Students generally have favourable attitudes about ICT, therefore efforts to instil the proper attitudes in students about using ICT for learning simply involve boosting these already-present positive attitudes. These were just a few of the major causes. According to (Albion, 2019) negative attitudes prevent students from using technology to instruct and teach while positive views promote things.

ICT use in Teacher Education

Different scholars are in possession of severe demands to make clear teaching and learning positions in the use of individual features. The below definitions since theories regard teaching as facing severe demands make clear the meaning of teaching. Teaching theories prepare us for conceptual frameworks of interpretation for the act of learning which indicates a focus on solutions to practical problems (Alharbi, 2020). Teaching methods are mainly based on theories of learning. The most familiar teaching theories are behaviourism and constructivism. These approaches are based on two main schools of psychology a certain own influenced this very day give lessons to theories that possess different perceptions on teaching design along with separate approaches towards pedagogy.

Teachers Basic ICT Knowledge

Teachers, who have a more optimistic approach in the direction of automation perceive further assured its expertness to carry out jobs connected to teaching machinery along with utilising processors frequently are also less nervous when using computers. (Sabzian & Gilakjani, 2022) stated that computer experience frequently increases favourable behaviour toward computers, in addition to the fact that learners' lack of computer use frequently explains their lack of confidence when confronted with computer activities.

Teachers Physical ICT Facilities

According to the European Commission (2011), ICT across overall topics for each student of educational institutions have access to the proper networks, hardware, and software. This infrastructure must be effective and efficient, accessible to all professors and students, and not restricted to certain subjects or fields of study. The institution must offer all students, professors, and administrators' access to sufficient space on the Internet as well as current frameworks and regulations for data security and privacy (Kumar & Tammelin, 2021). Without careful consideration, the introduction of ICT in education may further marginalize people who are already underserved.

Availability of Institutional Support

Learners are a group that is sometimes overlooked while preparing technical training for various persons to utilize ICT at the institution, according to Kumar & Tammelin (2021). ICT work at college can be highly influenced by learners' examination of ICT acquaintance with technologies and techniques learning through ICT, and their readiness for using ICT for their education, if learners are not supported in this regard. To guarantee that the use of ICT is both successful and efficient, ICT skills need to be expressly considered. To accomplish the purpose unique to the course, learners should possess sufficient ICT abilities this required a lot of effort to support the introduction of new software and, in certain circumstances, to teach skills to learners directly. The course of study comes into being nations frequently strict and overloaded, leaving little time for classroom activities, and school officials provide very little assistance and little reason for student teachers to use technology effectively (Hennessy, Harrison, & Wamakote, 2022). The effectiveness of the student teachers' ICT use program might be greatly aided by accessibility to ICT systems and technical support for ICT use around the clock, seven days a week. Therefore, before implementing ICT, the institution must evaluate the number of technical staff members who are currently on hand and have the requisite skills to assist manager instructors with the scholarly use of ICT (Kumar & Tammelin, 2019). Lack of certainty tutors never give lessons prepared to use ICT its school deployment of infrastructure and the existence of an accepted grand design have favourable results. According to research, the following outside elements have an impact on how members use automation deficiency administrative contributes to instruction approachability arrange matter of lack of preparation time for classes, connectivity, and home access (Jaber & Moore, 2021). The

favourable result of integrating ICT its gives lessons is greatly influenced by the support given by the organization being enterprise-held instructors by organization its turn of events along with ICT experiment (Kumar & Tammelin, 2022).

Research Methodology

Research Design

The research design of our work was quantitative. The details have been collected through a distribution proper questionnaire. A quantitative survey technique was to measure the result. Quantitative research involves the collection, analysis, and interpretation of numerical data from the population.

Sampling & Sample Size

The selected area of research be composed of 50 secondary school teachers and take away public and private sectors in Malir Town. The sample random technique was used to approach the respondents. A total of 10 schools were selected, five public and five private schools of Malir Town are taken as population respectively. Similarly, five teachers were chosen to fill out the questionnaire from each school respectively.

Data Analysis Technique

The study of the hypotheses was tested utilising each independent sample t-test to analyze the comparison between secondary teachers of public and private sectors about Information Technology. Statistical Package for Social Sciences (SPSS) 20.0 was holding down a job to analyze the hypotheses. For items set in order and take away 1 "strongly agree" to 5 "strongly disagree" a 5-point Likert scale questionnaire was employed.

Data Analysis & Findings

Table 1
Reliability

Cronbach's Alpha	No. Of Item
0.90	17

The above table shows that seventeen items were formulated as long as the survey form along with the reliability of questionnaire is **0.908** which is considered of high quality.

Demographic Information
TYPE OF SCHOOLS

Table 2
Descriptive Statistics of Demographic Information

		Frequency	Per cent	Valid per cent	Cumulative Percent
	Gender				
	Male	20	40.0	40.0	40.0
	Female	30	60.0	60.0	100.0
	Total	50	100.0	100.0	
Valid	Type of School				
	Public	25	50.0	50.0	50.0
	Private	25	50.0	50.0	100.0
	Total	50	100.0	100.0	
	Teaching Experience				

	Frequency	Per cent	Valid per cent	Cumulative Percent
1 to 5 years	28	56.0	56.0	56.0
More than 5 years	22	44.0	44.0	100.0
Total	50	100.0	100.0	

Table 2 represents that 20 were male whereas 30 were female respondents out of 50 respondents.

Constructed Items of the Study

Table 3

Descriptive Statistics of Construct Factors

Factors	Items	N	Minimum	Maximum	Mean	Std. Deviation
Teachers' perception on ICT	TP1	50	1	5	2.72	1.32
	TP2	50	1	5	3.46	1.18
	TP3	50	1	5	3.12	1.13
	TP4	50	1	5	3.32	1.23
	Tp5	50	1	5	2.60	1.22
Possessing ICT knowledge by Teachers	PK1	50	1	5	2.04	1.12
	PK2	50	1	5	2.12	1.20
	PK3	50	1	5	2.46	1.23
	PK4	50	1	5	2.26	1.19
	PK5	50	1	5	2.20	1.17
	PK6	50	1	5	2.56	1.21
	PK7	50	1	5	2.14	1.14
ICT Facilities provided by the school	ICTP1	50	1	5	2.54	1.23
	ICTP2	50	1	5	2.90	1.40
	ICTP3	50	1	5	3.02	1.30
	ICTP4	50	1	5	1.351	1.35
	ICTP5	50	1	5	1.243	1.24

Table 03 Teachers' Perception about Using ICT in teaching in public and private schools of Malir Town.

Independent Sample T-test

Hypotheses Testing

Hypothesis 01: There is no significant difference in secondary teachers' perception of using ICT in teaching between public and private schools in Malir Town Karachi.

Table 4

Teachers' Perception about Using ICT in Teaching in Govt. & Private Schools

Teachers' Perception of Using ICT in Teaching	T-test for Equality of Means						
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Teaching	2.599	48	0.97	.00800	.23474	.46398	.47998

Independent t-tests have been employed towards examine differences between public with private secondary school teachers' wisdom referring to using ICT in teaching. The result value (P=0.97) shows that the value is greater than set alpha (0.05) which means that the subject hypothesis failed to reject. Hence, the result of the test shows a certain there is no significant difference between public and private school teachers' perceptions of teaching.

Hypothesis 02: There is no significant difference in possessing Information Communication Technology knowledge between Public Teachers and Private Teachers in Malir Town Karachi.

Independent Sample T-test

Table 5

Teachers Possessing ICT knowledge between Govt. and Private Schools

Teachers' Possessing ICT Knowledge between Govt. & Private Schools	t-test for Equality of Means					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
	2.268	48	0.28	.64571	.28471	.07326	1.21817

Referring to the given hypothesis, the analyzed hold in high regard (0.28) not so much to set alpha (0.05) that have in mind the null hypothesis have being refuse shows that the teachers of public schools have higher knowledge regarding the ICT as the intended point of public teachers is 2.57 whereas the plan record of private teachers is 1.93.

Hypothesis 03: There is no significant difference between public and private schools in terms of providing ICT support to teachers in Malir Town.

Independent Sample T-test

Table 6

ICT provision schools to teachers by Govt. & Private Schools

ICT Provision to Teachers by Govt. & Private Schools	t-test for Equality of Means					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
	3.775	48	0.000	1.08800	.28823	.50847	1.66753

The above table shows that the analyzed moral values (0.00) are less than the set alpha (0.05) that measure as null hypothesis is rejected. The number of goals of public schools is 3.48 whereas in mind the number of goals of private schools is 2.40 which indicates that public

schools comparatively provide higher support to teachers than private schools.

Discussion, Conclusion and Recommendation

Discussion

The most important central point investigation was to conduct a comparison among teachers from public and private schools. The aim was to assess their perception of Information Communication Technology (ICT) and examine their understanding and knowledge related to integrating ICT into the teaching-learning process. Additionally, the study sought to examine the level of ICT support provided by both public and private schools to their respective teachers.

Conclusion

The result suggests that there is a remarkable distinctness in the perception of teachers regarding ICT between public and private schools. Additionally, it was observed certain public teachers generally have a high ranking of knowledge about ICT differentiated from their counterparts in private schools. Finally, the study revealed that public schools in Malir town offer more extensive ICT and technical support compared to private schools. In summary, the results indicate that public schools excel in terms of teachers' knowledge and provision of ICT support.

Recommendation

I. In today's modern world, the benefit of information communication technology in discipline is essential and cannot be ignored. Therefore, it is important to ensure that teaching staff are fully equipped with modern technology, so they can stay up-to-date with the latest trends and techniques.

II. It is also recommended that the directorate of inspection & registration of private institutes in Sindh ensure that teachers are hired based on merit and that private schools are held accountable for providing modern technology resources that result in compromising the quality of education.

III. Often, private school administrations fail to provide adequate salaries, which results in teachers constantly switching from one school to another. It is suggested that the directorate of inspection & registration of private institutes in Sindh enforce public rules to protect private teachers from exploitation and ensure they are not deprived of their fundamental rights.

IV. Furthermore, the directorate of inspection & registration of private institutes in Sindh should inspect schools to ensure they comply with public regulations, especially regarding the implementation of IT-related instructions.

V. Additionally, the Sindh Directorate of Inspection & Registration of Private Institutions should support nearby private schools that have been severely impacted by the recent COVID-19 outbreak in addition to focusing on enforcing laws

VI. It is also important to ensure that teachers in public schools receive training on modern technology. Regular seminars and workshops should be conducted to keep them updated on emerging IT trends and how to integrate them into the teaching-learning process. Moreover, school administrations should collaborate with various stakeholders to facilitate the use of IT in their respective schools, aiming for maximum utilization of ICT in the teaching process.

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