Use Of Instructional And Communication Technology During Pandemic: Perception Of Secondary Teachers

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Abstract

The purpose of this research was to investigate the perceptions of teachers regarding the usage and effectiveness of Information and Communication Technology (ICT) during the COVID-19 situation in Bagh city's private sector secondary schools. The study focused on computer-based learning, online teaching, and the impact of the COVID-19 pandemic on students in the secondary education sector. A descriptive research design was employed, and the sample size of 200 teachers, including 100 men and 100 women, was selected using random sampling method and Krejcie and Morgan's sample size chart, out of a total population of 595 secondary level teachers from 94 secondary schools in the district. Data collection involved the use of a self-designed questionnaire with closed-ended statements using a five-point Likert scale. The Statistical Package for Social Sciences (SPSS) software was utilized for data analysis, employing frequencies and percentages to examine the quantitative variables. The findings indicated that the majority of teachers reported using ICT during the COVID-19 situation, highlighting their adaptability and reliance on technology for remote teaching. However, challenges such as internet connectivity, affordability, and teacher training were identified. Nevertheless, the study also revealed the positive impact of technology on students' academic achievement, communication skills, and lifelong learning. Based on the conclusions drawn from the findings, recommendations were made for stakeholders, including schools, governments, and teacher training programs, to address the identified challenges and enhance the integration of technology in education.
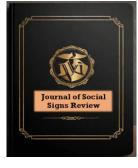**Key words**: Teachers, perception, Information and communication, Technology

Introduction

When schools worldwide closed in March 2020 due to the COVID-19 pandemic, teachers were compelled to transform their physical classrooms into online learning environments. This global event can be considered a critical incident, which, in the context of identity and teacher training research, refers to an unforeseen situation that disrupts planned activities and challenges teachers' beliefs, strategies, and emotions (Butterfield et al., 2005; Monereo, 2010). Critical incidents like these can serve as valuable resources for professional development, prompting teachers to re-evaluate their teaching and learning practices based on their deep-rooted beliefs (Monereo et al., 2015).

The pandemic-induced closure of schools necessitated a shift to virtual teaching, where educators had to utilize digital technologies, sometimes for the first time, to facilitate student learning. This sudden change in education had significant consequences, widening educational inequalities (Dorn et al., 2020) and affecting students' social and emotional well-being (Colao et al., 2020). In this context, families also became more involved in their children's education. Furthermore, with regard to the objectives of this study, teaching strategies needed to be reexamined for the new virtual classrooms. Specifically, this research focuses on analyzing teachers' use of digital technologies or Information and Communication Technologies (ICT) during the lockdown to explore how these practices influence their conceptions of teaching and learning.

For many years, scholars have argued that integrating ICT in education can adapt teaching to individual students' needs. They assert that ICT can promote collaboration, interactivity, the use of multimedia, and learner control, contributing to the acquisition of 21st-century competencies (Ertmer et al., 2015). However, despite the extensive use of ICT in classrooms, studies, including those from PISA, have shown limited transformative effects on teaching and learning processes (Carinci et al., 2015). These studies indicate that countries heavily invested in ICT for education did not demonstrate significant improvements in student achievement in reading, mathematics, or science (Carinci et al., 2015). Andreas Schleicher, the head and coordinator of PISA studies, even suggested that technology may be doing more harm than good in schools today (Bagshaw, 2016).

Contrary to these large-scale studies, experimental research consistently demonstrates moderate but positive effects of ICT on learning. Meta-analyses and individual studies have shown the benefits of various ICT applications, such as touch screens in preschools, cell phones, and video games, on student learning outcomes (Xie et al., 2018; Sung et al., 2015; Clark et al., 2016; Mayer, 2019; Corcelles and Castelló, 2017; Genlott and Grönlund, 2016). However, disconnect between these experimental findings and large-scale studies could be attributed to differences in the design and control of the studies, as well as the varying uses of ICT in different educational contexts (de Aldama, 2020).

Teachers' beliefs about learning and teaching play a crucial role in their use of ICT in the classroom. Teachers with constructivist beliefs tend to use ICT more extensively and in a more student-centered manner, focusing on problem-solving skills (Tondeur et al., 2017; Ertmer et al., 2015). On the other hand, teachers with more traditional beliefs often use ICT as a substitute for traditional resources to transmit information (de Aldama and Pozo, 2016). However, the relationship between teachers' beliefs and their actual practices is not always straightforward, as teachers' beliefs can be multifaceted and context-dependent (Ertmer et al., 2015; López-Íñiguez et al., 2014). Furthermore, the complexity of

measuring and evaluating teachers' beliefs adds another layer of challenge to understanding their relationship with educational practices (Schraw and Olafson, 2015).

Factors such as gender, age, educational level, and curriculum subjects have also been identified as influential in teachers' use of ICT, although the findings are inconclusive (Suárez et al., 2012). It is worth noting that the COVID-19 pandemic has prompted numerous studies on the use of ICT in distance education. These studies have focused on the effects of school closures, proposed principles for ICT use, and examined teachers' experiences during the pandemic (Zhang et al., 2020). However, there is a dearth of literature on this topic in Pakistan, specifically in the district of Bagh, Azad Kashmir, which highlights the research gap that this study aims to address.

Statement of the Problem

During the COVID-19 pandemic, educational institutions in Azad Jammu and Kashmir had to resort to Information and Communication Technology (ICT) for teaching and learning, spanning from primary to higher education levels. However, this adoption of ICT encountered substantial obstacles in this remote region, as internet services were severely inadequate, with most areas lacking connectivity entirely. The research study aims to address the following issues: the degree of dependence on ICT for education during the pandemic, the impact of limited or absent internet services on the accessibility and efficacy of ICT-based learning, identification of alternative solutions used by institutions to facilitate learning in areas with poor connectivity, and an evaluation of students' academic performance and learning outcomes in light of these challenges. Keeping in view the above situation the researcher intends to conduct the present study entitled, Perception regarding usage of ICT during COVID-19 in Azad Jammu and Kashmir.

Objectives of study

The study was conducted in district Bagh Azad Jammu and Kashmir to achieve the following objectives:

1. **To find out the Perceptions of Teachers about the usage of ICT during COVID-19 in city Bagh.**
2. **To find out the Perceptions of teachers about the effectiveness ICT during COVID-19 situation in city Bagh.**

Literature Review

The COVID-19 pandemic has had a profound impact on education worldwide, leading to the adoption of remote learning methods. In this context, Information and Communication Technology (ICT) has played a crucial role in facilitating online teaching and learning. This literature review aims to explore and analyze teachers' perceptions regarding the use of ICT during the COVID-19 situation. The integration of ICT in education has been a topic of interest for many researchers. Various studies have emphasized the benefits of incorporating ICT tools into teaching practices, such as enhancing engagement, fostering critical thinking, and promoting collaborative learning (Liu, 2020). However, the sudden shift to online education during the pandemic has posed challenges and raised questions about teachers' readiness and perception towards ICT integration.

The integration of Information and Communication Technology (ICT) in education has been widely acknowledged for its potential to enhance teaching and learning experiences. Several studies have highlighted the benefits of incorporating ICT tools into educational practices. ICT can make learning more interactive and engaging for students.

Multimedia elements, such as videos, animations, and virtual simulations, can capture students' attention and facilitate active participation in the learning process (Albirini, 2006). ICT tools provide opportunities for students to analyze, evaluate, and apply information in real-world contexts. Online research, data analysis, and collaborative problem-solving activities can develop critical thinking skills and foster creativity (Liu, 2020). ICT enables easy access to a vast amount of information and educational resources beyond the limitations of traditional textbooks. Online libraries, educational websites, and digital platforms offer a wealth of up-to-date content, enhancing students' access to diverse knowledge (Albirini, 2006). ICT tools facilitate communication and collaboration among students and teachers. Online discussion forums, video conferencing, and collaborative document editing platforms enable students to work together, exchange ideas, and receive feedback from peers and teachers (Liu et al., 2020).

ICT can support personalized learning approaches by providing adaptive and tailored learning experiences. Educational software and online platforms can assess students' individual progress, identify areas of weakness, and offer customized learning materials and activities (Albirini, 2006). To effectively integrate ICT in education, various models and frameworks have been proposed. These models provide guidance to teachers and educational institutions on how to incorporate ICT into their teaching practices. Some commonly mentioned models include:

The Substitution, Augmentation, Modification, and Redefinition (SAMR) model by Puentedura (2006) classifies the integration of technology into four levels. It encourages teachers to move beyond simple substitution (e.g., using digital textbooks instead of printed ones) to redefining learning tasks and creating new possibilities with technology.

The Technological Pedagogical Content Knowledge (TPACK) framework emphasizes the integration of technology, pedagogy, and subject matter knowledge. It highlights the importance of teachers' understanding of how technology can enhance specific subject content and pedagogical approaches (Mishra & Koehler, 2006). The Technology Integration Matrix (TIM) developed by the Florida Center for Instructional Technology provides a visual representation of technology integration along a continuum from teacher-centered to student-centered and from simple to complex use of technology (Roblyer & Doering, 2014).

For successful ICT integration, teachers' professional development plays a crucial role. Teachers need to develop digital literacy skills, pedagogical knowledge related to technology integration, and the ability to design and implement technology-enhanced lessons effectively. Professional development programs that focus on ICT integration have been shown to improve teachers' confidence, attitudes, and instructional practices (Mouza et al., 2014).

One of the challenges in ICT integration is the existence of a digital divide, where not all students have equal access to technology and the internet. Socioeconomic disparities and geographical factors contribute to this divide, impacting students' opportunities for digital learning. Addressing the digital divide and ensuring equitable access to technology and online resources is essential to maximize the benefits of ICT integration in education (Warschauer, 2014).

Research suggests that teachers' preparedness for online teaching significantly influences their perception of ICT integration during the COVID-19 situation. A study by Al-Rahmi et al. (2020) found that teachers who received prior training and had experience

with ICT tools reported higher levels of confidence and positive attitudes towards online teaching. Conversely, teachers with limited experience in using ICT faced challenges in adapting to the remote learning environment (Alqurashi & Alqarni, 2021). During the COVID-19 pandemic, the sudden shift to online teaching necessitated teachers to rapidly adapt to new instructional methods and technologies. Research emphasizes the significance of teacher preparedness for online teaching, as it directly influences their ability to effectively navigate the digital learning environment and support students' educational needs.

Several studies have highlighted the positive impact of training and professional development programs on teachers' preparedness for online teaching. Al-Rahmi et al. (2020) found that teachers who received prior training in online teaching reported higher levels of confidence and perceived competence in using ICT tools. Similarly, a study by Hodges (2020) emphasized the importance of comprehensive and ongoing professional development to enhance teachers' skills and pedagogical practices in the online learning context. Teachers' digital literacy and technical skills play a crucial role in their preparedness for online teaching. It encompasses their ability to effectively use digital tools, navigate learning management systems, facilitate online discussions, and troubleshoot technical issues. A study by Ertmer et al. (2012) highlighted the importance of teachers' proficiency in using technology as a key component of their preparedness for online instruction.

Adapting pedagogical strategies to the online environment is another aspect of teacher preparedness. Teachers need to modify their instructional approaches to foster active engagement, collaboration, and interactive learning experiences in the digital space. Research by Irvine et al. (2020) emphasized the importance of pedagogical flexibility and innovation to address the unique challenges and opportunities of online teaching.

Teachers' self-efficacy and confidence in their ability to teach effectively online are crucial for their preparedness. A study by Hew and Kang (2020) found a positive correlation between teachers' perceived self-efficacy in online teaching and their actual instructional practices. Teachers who had higher self-efficacy levels were more likely to engage in effective online teaching strategies and adapt to the challenges of remote instruction. The provision of support and opportunities for collaboration can significantly contribute to teachers' preparedness for online teaching. Collaborative communities of practice, online forums, and mentoring programs can facilitate knowledge sharing, problem-solving, and the exchange of best practices among teachers (Irvine et al., 2020). Such support systems can help alleviate feelings of isolation and enhance teachers' preparedness and confidence in online instruction.

Continuous reflection and evaluation of online teaching practices are essential for teachers' ongoing preparedness and growth. Teachers should engage in self-reflection, seek feedback from colleagues and students, and actively participate in professional learning communities to refine their instructional strategies and address areas of improvement (Ertmer et al., 2012). Teacher preparedness for online teaching is critical for the successful implementation of remote learning. Providing teachers with adequate training, professional development opportunities, and support systems is vital to enhance their digital literacy, technical skills, pedagogical approaches, self-efficacy, and confidence. Continuous reflection and evaluation further contribute to teachers' ongoing growth and preparedness in the ever-evolving landscape of online teaching.

Research Methodology

The research employed a descriptive research design to investigate the phenomenon under study. The primary method of data collection was a survey, specifically utilizing a questionnaire to gather information from participants. The questionnaire consisted of a series of structured questions designed to gather specific data relevant to the research objectives. The survey method allowed for efficient data collection from a large sample of participants, enabling a comprehensive understanding of the characteristics and current status of the phenomenon being studied. The Teachers who are teaching at the secondary level made up the research population. District Bagh Azad Jammu and Kashmir is home to 94 secondary schools, 52 for male and 42 for female. These schools employ 595 secondary instructors, 362 of whom are male and 233 of whom are female. The details are listed in the chart below. The researcher utilized a random sampling method to select a sample from a population of 595 instructors. Krejcie and Morgan's sample size chart was consulted, recommending a sample size of 217 for a population of this size. However, the researcher opted for a smaller sample size of 200 instructors, comprising 100 male and 100 female teachers. By choosing a sample size lower than the suggested value, the study may have slightly reduced its level of confidence in the findings. Nevertheless, factors such as resource constraints and time limitations might have influenced the decision to use a smaller sample. As a result, while interpreting the study's outcomes, it is essential to consider the chosen sample size and acknowledge any potential limitations associated with it. Details are provided below.

Questionnaire is one of the instruments that focus on the specific information from the respondents. According to Arikunto (2006), questionnaire is questions which are written in the paper in order to get information and response. In this study, the researcher used a self-designed questionnaire to collect data from the teachers which was comprised of closed ended statements using five point Likert Scale. The first section of the questionnaire contained demographic information of the respondents and second section contained 16 Likert Scale Statements. The questionnaire was developed by the researcher keeping in view the objectives of the study. The Cronbach's Alpha score of 0.852 was significant enough to warrant further investigation.

The researcher personally visited each of the selected schools to gather data for the study. The researcher introduced themselves as a researcher and informed the sampled respondents of the study's objective upon arrival. Each participant received a copy of the meticulously prepared questionnaires before they were given to them. To ensure that respondents understood the questions and could provide accurate responses, the researcher provided clear instructions on how to complete the questionnaire and offered assistance.

The questionnaires were securely and confidentially collected from the participants after they were completed. The analyst painstakingly looks at every poll to guarantee all questions had been addressed and that there were no absent or fragmented reactions. The respondents were acknowledged for their valuable contributions to the study and thanked for their cooperation and time.

Data Analysis

The data analysis methodology included using the Statistical Package for Social Sciences (SPSS) programming to analyze the gathered information. The frequencies and percentages method was used to conduct a descriptive analysis of the quantitative variables. Because of this, a comprehensive comprehension of the distribution of responses and the prevalence of various options for responding was possible. The frequencies strategy counted the number of events for every reaction choice, while the rates technique determined the extent of respondents who selected every reaction choice. The researcher made certain that the accuracy, integrity, and appropriate preprocessing of the data were maintained throughout the analysis. In a nutshell, the process of analyzing the data involved using SPSS to carry out a descriptive analysis based on frequencies and percentages, which shed light on the distribution and prevalence of the options for responses.

Table 1: You used ICT during COVID-19 situation.

Responses	N	Percentage
Strongly Disagreed	8	4.0%
Disagreed	13	6.5%
Neutral	10	5.0%
Agreed	104	52.0%
Strongly Agreed	65	32.5%
Total	200	100%

The data for Table 1 showed that (52.5%) the majority of teachers agreed and (32.5%) were strongly agreed that they used ICT during COVID-19 situation; since only (4.0%) were disagreed strongly and (6.5%) were disagreed, while (5.0%) remained neutral to this statement, it is concluded that teachers used ICT during COVID-19 situation.

Table 2: Your school environment is connected to internet.

Responses	N	Percentage
Strongly Disagreed	98	49.0%
Disagreed	77	38.5%
Neutral	11	5.5%
Agreed	11	5.5%
Strongly Agreed	03	1.5%
Total	200	100%

The data for Table 2 showed that (49.0%) the majority of students strongly disagreed, and (38.5%) disagreed that their school environment is connected to internet; as only (5.5%) students agreed and (1.5%) strongly agreed, while (5.5%) stayed neutral to this statement, it was therefore concluded that teachers' school environment is not connected to internet.

Table 3: Internet speed is enough for carrying out classroom activities.

Responses	N	Percentage
Strongly Disagreed	94	47.0%
Disagreed	83	41.5%
Neutral	14	7.0%
Agreed	1	.5%
Strongly Agreed	8	4.0%

Total	200	100%

Since the majority of respondents (47.0%) disagreed and (41.5%) strongly disagreed that Internet speed is enough for carrying out classroom activities., and since only (4.0%) of the sample strongly agreed, (0.5%) agreed, and (7.0%) remained neutral on the issue, it is concluded that teachers Internet speed is not enough for carrying out classroom activities..

Table 4: Internet is affordable for students.

Responses	N	Percentage
Strongly Disagreed	91	45.5%
Disagreed	69	34.5%
Neutral	20	10.0%
Agreed	18	9.0%
Strongly Agreed	2	1.0%
Total	200	100%

According to the data in Table 4, the majority of respondents (45.5 percent) strongly disagreed and the majority of respondents (34.5 percent) disagreed that Internet is affordable for students; It was determined that Internet is not affordable for students due to the fact that only 9.0% of respondents agreed, only 1.0% strongly agreed, and 10.0% were unable to answer.

Table 5: Students have android and laptop at their home.

Responses	N	Percentage
Strongly Disagreed	7	3.5%
Disagreed	6	3.0%
Neutral	16	8.0%
Agreed	100	50.0%
Strongly Agreed	71	35.5%
Total	200	100%

Data for table no. 5 show that (50.0%) The majority of respondents concurred, with 35.5% firmly agreeing, that they think that students have android and laptop at their home.; while only (3.5%) respondents in the sample strongly disagreed and (3.0%) respondents disagreed, while (8.0%) respondents remained neutral to this statement, It can be deduced from this that students have android and laptop at their home..

Table 6: Students have internet at their home.

Responses	N	%age
Strongly Disagreed	69	34.5%
Disagreed	109	54.5%
Neutral	1	0.5%
Agreed	12	6.0%
Strongly Agreed	9	4.5%
Total	200	100%

The data for Table 6 show that (54.5%) the majority of respondents surveyed disagreed, and (34.5%) respondents strongly disagreed that students have internet at their home;

whereas only (24.0%) respondents agreed and (4.5%) strongly disagree, while (0.5%) remained neutral to this statement, and it was concluded that Students have internet at their home.

Table 7: Teachers' feel it easy to take classes using ICT

Responses	N	Percentage
Strongly Disagreed	91	45.5%
Disagreed	85	42.5%
Neutral	3	1.5%
Agreed	5	2.5%
Strongly Agreed	16	8.0%
Total	200	100%

Data for table no. 7 showed that (45.5%) of the majority of the respondents strongly disagreed and (42.5%) of the respondents disagreed that Teachers feel it easy to take classes using ICT; since only (2.5%) respondents in the sample agreed (and 8.0%) strongly agreed, while (1.5%) remained neutral to this statement, therefore it was concluded that teachers do not feel it easy to take classes using ICT.

Table 8: School administration pays them internet charges.

Responses	N	Percentage
Strongly Disagreed	80	40.0%
Disagreed	72	36.0%
Neutral	6	3.0%
Agreed	21	10.5%
Strongly Agreed	21	10.5%
Total	200	100%

The data for Table 8 show that (40.0%) of the majority of the respondents strongly disagreed, and (36.0%) of the respondents disagreed that School administration pays them internet charges.; Although only (10.5%) respondents agreed, and (10.5%) strongly agreed, while (3.0%) remained neutral to this statement, it was concluded that school administration does not pay them internet charges.

Table 9: Technology increases students' academic achievement.

Responses	N	Percentage
Strongly Disagreed	5	2.5%
Disagreed	21	10.5%
Neutral	15	7.5%
Agreed	77	38.5%
Strongly Agreed	82	41.0%
Total	200	100%

Table 9 statistics demonstrate that most survey participants (41.0%) strongly agreed and (38.5%) agreed that technology increases students' academic achievement.. It can be concluded that Technology increases students' academic achievement, because only 10.5% of respondents disagreed, 2.5% strongly disagreed, and 7.5% were neutral.

Table 10: Technology changes the role of the teacher.

Responses	N	Percentage
Strongly Disagreed	5	2.5%
Disagreed	5	2.5%
Neutral	21	10.5%
Agreed	96	48.0%
Strongly Agreed	73	36.5%
Total	200	100%

Based on the data in Table 10, which show that (48.0%) of respondents in the sample agreed and (36.5%) strongly agreed that technology changes the role of the teacher. it is possible to draw the conclusion that technology changes the role of the teacher. because only (2.5%) of respondents remained neutral to this statement and (2.5%) of respondents strongly disagreed.

Table 11: Technology enhances lifelong learning.

Responses	N	Percentage
Strongly Disagreed	3	1.5%
Disagreed	18	9.0%
Neutral	18	9.0%
Agreed	85	42.5%
Strongly Agreed	76	38.0%
Total	200	100.00%

The data for Table 11 showed that (42.5%) the majority of respondents agreed, and (38.0%) respondents strongly agreed that technology enhances lifelong learning; while only (9.0%) respondents disagreed, and (1.5%) disagreed strongly, while (9.0%) stayed neutral to this statement, and it was concluded that technology enhances lifelong learning.

.Table 12: Technology improves Students' communication skills.

Responses	N	Percentage
Strongly Disagreed	7	3.5%
Disagreed	11	5.5%
Neutral	16	8.0%
Agreed	93	46.5%
Strongly Agreed	73	36.5%
Total	200	100%

The data for Table 12 showed that (46.5%) the majority of respondents agreed and (36.5%) respondents strongly agreed that technology improves students' communication skills; since only (5.5%) of the respondents disagreed and (3.5%) strongly disagree, while (8.0%) could not respond to this statement, it is concluded that technology improves students' communication skills..

Table 13: Technology reduces the number of teachers in future.

Responses	N	Percentage
Strongly Disagreed	6	3.0%
Disagreed	11	5.5%

Neutral	19	9.5%
Agreed	71	35.5%
Strongly Agreed	93	46.5%
Total	200	100.00%

Table 13 data demonstrate that the majority of respondents—46.5%—strongly agreed and that 35.5% agreed that technology reduces the number of teachers in future. Only (5.5%) of the respondents disagreed, and (3.0%) strongly disagreed, while (9.5%) remained neutral on the issue, leading to the conclusion that technology will reduce the number of teachers in future..

Table 14: Technology enhances your professional development.

Responses	N	Percentage
Strongly Disagreed	64	32.0%
Disagreed	95	47.5%
Neutral	27	13.5%
Agreed	12	6.0%
Strongly Agreed	2	1.0%
Total	200	100%

Since only (6.0%) of the people interviewed agreed and (1.0%) of them strongly agreed, and (13.5%) of them didn't have an opinion either way, it was decided that technology enhances teachers' professional development. According to the data and chart in Table 4.17, the majority of respondents interviewed (47.5%) strongly disagreed and (32.0%) disagreed that technology enhances your professional development.

Table 15: Technology helps in finding students' personal learning style.

Responses	N	Percentage
Strongly Disagreed	2	1.0%
Disagreed	16	8.0%
Neutral	19	9.5%
Agreed	77	38.5%
Strongly Agreed	86	43.0%
Total	200	100%

According to the data in Table 15, the majority of survey respondents strongly agreed (40%) and agreed that technology helps in finding students' personal learning style.. However, only 8.0 percent of respondents disagreed, 1.0 percent strongly disagreed, and 9.5% remained neutral. As a result, it is determined that technology helps in finding students' personal learning style.

Table 16: Technology is helpful in the classroom.

Responses	N	Percentage
Strongly Disagreed	6	3.0%
Disagreed	11	5.5%
Neutral	14	7.0%
Agreed	95	47.5%
Strongly Agreed	74	37.0%

Total	200	100%

The data for Table 16 showed that (47.5%) the majority of respondents agreed and (37.0%) respondents strongly agreed that technology is helpful in the classroom; since only (5.5%) of respondents disagreed and (3.0%) strongly disagreed, while (7.0%) remained neutral to this statement, it is concluded that Technology is helpful in the classroom.

Conclusions

Teachers predominantly used ICT during the COVID-19 situation, highlighting their adaptability and reliance on technology in remote teaching. Students faced challenges with internet connectivity in their school environment, indicating a need for improved infrastructure. Teachers perceived the internet speed as inadequate for carrying out classroom activities, suggesting a potential hindrance to effective online teaching. Internet affordability for students was a concern, indicating potential disparities in access and the need for support in this regard. Internet access for students at home was limited, suggesting a digital divide that may affect their ability to engage in online learning.

The role of teachers was perceived to be influenced by technology, signaling a shift in traditional teaching practices. Technology was viewed as beneficial for lifelong learning, indicating its potential for continuous skill development. Technology was seen as a tool for improving students' communication skills, highlighting its role in facilitating effective interaction. The potential impact of technology on reducing the number of teachers in the future was acknowledged, suggesting changing dynamics in the education sector. Teachers' professional development through technology was viewed less positively, indicating a potential gap in utilizing technology for professional growth. Technology was seen as valuable in identifying students' personal learning styles, emphasizing its potential for personalized instruction. Technology was considered helpful in the classroom, reflecting its positive impact on instructional practices and student engagement.

These conclusions highlight the various aspects of technology's role in education, including its benefits, challenges, and potential areas for improvement. They underscore the importance of addressing issues such as internet connectivity, affordability, and professional development to ensure equitable access and effective integration of technology in educational settings.

Recommendations

Based on the conclusions drawn from the findings, the following recommendations can be made for various stakeholders involved in the education sector:

1. **Schools and educational institutions should prioritize improving internet connectivity within their premises to ensure seamless access to online resources and enable effective digital learning.**
2. **Governments and policymakers should invest in infrastructure development to ensure reliable and affordable internet connectivity, particularly in underserved areas, to bridge the digital divide and promote equitable access to education.**
3. **Teacher training programs should incorporate comprehensive ICT training to enhance teachers' digital skills and confidence in utilizing technology for effective teaching and learning.**
4. **Schools and educational institutions should consider providing financial support or subsidies for internet charges, especially for teachers, to alleviate the financial burden associated with remote teaching.**
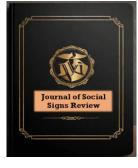
5. **Efforts should be made to provide students with affordable and reliable internet access at home, ensuring they can actively participate in online learning activities.**
    References

Albirini, A. (2006). Teachers' attitudes toward information and communication technologies: The case of Syrian EFL teachers. *Computers & Education*, 47(4), 373-398.

Alqurashi, E., & Alqarni, A. (2021). The readiness of Saudi teachers for online learning during the COVID-19 pandemic. *Education and Information Technologies*, 26(2), 1967-1982.

Al-Rahmi, W. M. (2020). The relationship between online learning readiness, academic motivations, and perceived learning among higher education students in Yemen amid COVID-19. *Journal of Research in Innovative Teaching & Learning*, 13(2), 119-136.

Butterfield, J., Hsiung, C., & Lee, W. (2005). Teachers' Critical Incidents: Ethical dilemmas in teaching practice. *Asia Pacific Education Review*, 6(2), 125-134.

Carinci, S., Dündar, H., & O'Dwyer, L. M. (2015). A synthesis of ICT in education research literature. *Journal of Technology and Teacher Education*, 23(2), 157-190.

Clark, D. B., Tanner-Smith, E. E., & Killingsworth, S. S. (2016). Digital games, design, and learning: A systematic review and meta-analysis. *Review of Educational Research*, 86(1), 79-122.

Colao, A., Piscitelli, P., Pulimeno, M., Colazzo, S., Cutti, S., & Limosani, F. (2020). COVID-19 masks: A danger to plastic surgeons. *Aesthetic Plastic Surgery*, 44(3), 1014-1015.

Corcelles, R., & Castelló, M. (2017). The use of tablets in secondary education and the effect on learning autonomy. *British Journal of Educational Technology*, 48(2), 502-514.

de Aldama, C. & Pozo, J.I. (2020). University Teachers' Beliefs about the Efficacy of Using Digital Technologies in University Teaching. *International Journal of Educational Technology in Higher Education*, 17(1), 1-20.

de Aldama, C., & Pozo, J. I. (2016). University Teachers' Beliefs About the Efficacy of Using Digital Technologies in University Teaching. *International Journal of Educational Technology in Higher Education*, 13(1), 27.

Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2020). COVID-19 and student learning in the United States: The hurt could last a lifetime. *McKinsey & Company*.

Ertmer, P. A., et al. (2012). Examining teachers' beliefs about the role of technology in the elementary classroom. *Journal of Research on Technology in Education*, 45(1), 61-88.

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2015). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, 85, 49-58.

Genlott, A. A., & Grönlund, Å. (2016). Closing the gaps - Improving literacy and mathematics by ict-enhanced collaboration. *Computers & Education*, 100, 1-12

Hew, K. F., & Kang, L. (2020). Predictors of teachers' perceived efficacy of teaching in online environments during COVID-19. *Journal of Information Technology Education: Research*, 19, 209-226.

Hodges, C. (2020). The difference between emergency remote teaching and online learning. *EDUCAUSE Review*, 27, 1-12.

Liu, S. H. (2020). Technology-enhanced learning environments: A systematic review and meta-analysis. *International Journal of Educational Research*, 100, 101556.

López-Íñiguez, G., Wilson, M., & Posey, L. (2014). Teachers' beliefs about learning and teaching English for specific purposes. *System*, 42, 377-389.

Mayer, R. E. (2019). Multimedia Learning (2nd ed.). *Cambridge University Press*.

Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017-1054.

Monereo, C. (2010). Teachers as researchers of their own practice: A proposal for reflective teacher research. In L. M. English & M. Gillen (Eds.), Adult Literacy, Numeracy & Language: Policy, Practice and Research (pp. 46-65). *Open University Press*.

Monereo, C., Badia, A., & Alcalá, L. (2015). Integrating Reflection on the Self and Reflection with Others in Teacher Training: A Case Study. *Reflective Practice*, 16(2), 230-242.

Puentedura, R. R. (2006). Transformation, technology, and education. *Learning & Leading with Technology*, 33(6), 14-18.

Roblyer, M. D., & Doering, A. H. (2014). Integrating educational technology into teaching (6th ed.). *Pearson*.

Schraw, G., & Olafson, L. (2015). Teachers' epistemological beliefs and epistemological shift. *Educational Psychology Review*, 27(3), 505-518.

Suárez, J. C., Cerezo, R., & Núñez, J. C. (2012). Teachers' ICT adoption: Predicting their (in)capacity for changing teaching. *Computers & Education*, 58(3), 1089-1099.

Sung, Y. T., Chang, K. E., & Liu, T. C. (2015). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis. *Computers & Education*, 123, 104-116.

Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review of qualitative evidence. *Educational Technology Research and Development*, 65(3), 555-575.

Warschauer, M. (2014). Learning in the cloud: How (and why) to transform schools with digital media. *Teachers College Press*.

Xie, Y., Ke, F., & Sharma, P. (2018). The effect of mobile learning on students' learning behaviours and performance: *A meta-analysis. Computers & Education*, 123, 104-116.

Zhang, W., Wang, Y., Yang, L., & Wang, C. (2020). Suspending classes without stopping learning: China's education emergency management policy in the COVID-19 outbreak. *Journal of Risk and Financial Management*, 13(3), 55.