



# An Empirical Study On Perception Of School Teachers 'Towards Integration Of ICT With Teaching: A Case From Bageshwar District Of Uttarakhand

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## Introduction

Information and communication technology, or ICT, is widely employed in the field of education today and include devices like computers, the Internet, and electronic delivery systems like radios, televisions, and projectors, among others. The power of information and communication technologies has transformed many facets of people's life. The effects of ICT in every area of life have been huge during the last two to three decades. These fields behave differently now than they did in the past. ICT is regarded as a potent instrument for reforming and changing education. ICT is being used more and more successfully in education, learning, and assessment. Many earlier research has demonstrated that the proper use of ICT can improve educational quality and link learning to real-life problems. Learning and teaching are inextricably linked and complement one another. Because every human is different, different people learn best with different methods. Every student ought to possess the liberty and autonomy to choose their own educational route, which calls for focused attention, initiative, and self-education; instead of feeling pressured to fit into the antiquated and stereotypical educational system, they should do as they see fit. According to contemporary viewpoints, students are more likely to succeed when they are allowed to work independently, realize their own potential and take action to achieve their objectives, organize their assignments independently, and feel free to express their thoughts to their lecturers. ICT increases the possibility of a more student-centered method of instruction in a classroom. As we swiftly enter a digital world of information and media, the goal and purpose of ICT in education become more whose significance will keep growing and getting better every day.

ICT frequently makes education more accessible. Learning may happen anywhere, at any time, with ICT. For instance, online course materials may be accessed seven days a week, twenty-four hours a day. In teleconference classrooms, students and teachers can communicate at the same time with comfort and convenience. Learning and teaching are no longer solely dependent on printed materials thanks to ICT. On the Internet, there are a plethora of materials available for learning through audiovisual presentations, video clips, visual images, and more. According to recent studies, ICT helps to change a classroom setting into one that is learner-centered. There is no denying that utilizing the newest technology in the classroom improves student achievement in terms of both teaching and learning. ICT makes teaching and learning more effective by removing obstacles.

Students utilize ICT as a tool to research topics, work through issues, and come up with solutions for those issues. Knowledge acquisition is more accessible thanks to ICT, and learning concepts are recognized while involving kids in ICT application. It is also a fact, though, that ICT usage is limited in educational settings like schools. In the context of contemporary education, ICT has become more widely used to support students with disabilities. Technology can help improve the learning environment for students with disabilities. The use of ICT in the classroom must be prioritized. This is due to the fact that using contemporary techniques in the classroom helps students' pedagogical development. Consequently, the use of ICT will result in increased learning success with the aid of ICT procedures and features.

This study has a lot to say about secondary school education, where students are just starting to learn on their own. Although secondary school classrooms have access to educational technology, the proportion of teachers who use it is not up to par with modern standards. There have been rumors that educational schools' computer labs are underequipped and inexperienced. It's also crucial to remember that more than 50% of instructors use computers and the Internet for up to several hours each day. But a relatively tiny percentage of these educators incorporate technology into their teaching. Most educators either lack the confidence or don't feel qualified to employ this technology. Instructors, who play a key role in integrating ICT into the classroom, may face challenging issues like teachers' ability to learn new ICTs, their ability to use ICT instruments, and their availability of time to implement time-limited lessons.

This suggests a rigorous test for Bageshwar district school teachers, requiring them to be cognitively and physically fit and ready to integrate ICT into their everyday instruction strategies. In order to enable students to keep up with the rapidly evolving field of technology, it is imperative that ICT be successfully implemented in teaching and learning environments.

## LITERATURE REVIEW

Information and communication technology (ICT) integration in education refers to the incorporation of computer-based communication into regular classroom instruction. In addition to helping kids get ready for Teachers are thought to be the primary users of ICT in their everyday lessons throughout the Information Age, which is defined as the period of computerizing information. Through ICT, instructors can serve as catalysts for the incorporation of technology. It would be simpler for teachers to design an ICT class if institutions provided them with the assistance, tools, and technology they need. These teachers' primary duties will be to modify the structure of their courses, develop and clarify the new assignments, and set up the computer lab with the help of their technology learning specialists or assistants. In order to support student learning, teachers should not only learn how to use technology to improve traditional teaching methods or boost productivity, but also how to integrate ICT into lesson plans from a student-centered perspective. This implies that educators must employ ICT in more innovative and useful ways in order to produce activities and classes that are more rewarding and engaging.

The integration of Information and Communication Technology (ICT) in education is a rapidly growing trend, and understanding teachers' perceptions of its use is crucial in ensuring effective implementation. In a study by Wachira and Keengwe (2011), urban school mathematics teachers were interviewed to understand the barriers to technology integration. The findings revealed that teachers valued classroom components more than online aspects of blended learning. This preference was driven by their perceptions that specific learning functions were better suited to particular formats. This indicates that teachers' perceptions of technology integration are influenced by their beliefs about the effectiveness of different learning modalities<sup>1</sup>.

Lau et al. (2011) conducted a systematic review of ICT-based interventions for promoting physical activity behavior change in children and adolescents. While not directly related to academic ICT use, this study highlights the potential of ICT to influence behavior change in students. This finding suggests that ICT can be leveraged to enhance various aspects of students' learning experiences beyond academic achievement<sup>2</sup>.

Tondeur et al. (2019) examined the role of teacher educators in preparing teachers for technology integration. The study investigated the attitudes, self-efficacy, competencies, and strategies of teacher educators related to ICT integration. The findings revealed that teacher educators play a crucial role as gatekeepers in preparing the next generation of teachers for technology integration in education. This underscores the significance of understanding the perspectives and practices of teacher educators in shaping the attitudes of future teachers towards ICT<sup>3</sup>.

Rohaani, Taconis, and Jochems (2010) reviewed the relations between teachers' knowledge and pupils' attitudes in primary technology education. The study emphasized the importance of teachers' knowledge and expertise in influencing students' attitudes towards technology. This finding underscores the need to explore how teachers' perceptions and competencies in using ICT impact students' attitudes and learning outcomes<sup>4</sup>.

Ruggiero and Mong (2015) conducted a qualitative study involving interviews with ICT directors, headmasters, teachers, and students in Saudi secondary schools. The research focused on the teacher technology integration experience, highlighting the practices and reflections of educators in the classroom. This study provides valuable insights into the experiences and challenges faced by teachers when integrating technology into their pedagogical practices<sup>5</sup>.

Mailizar et al. (2020) conducted a study to explore the barriers to e-learning implementation during the COVID-19 pandemic in Indonesia. The findings revealed that secondary school mathematics teachers faced challenges in implementing e-learning, which is a form of ICT integration, due to limited access to technology and inadequate ICT literacy. This study highlights the importance of addressing the digital competence of teachers to effectively utilize ICT in secondary education<sup>6</sup>.

Ghomi and Redecker (2019) developed and evaluated a self-assessment instrument for teachers' digital competence. The study emphasized the significance of digital competence among educators, which is crucial for effectively integrating ICT in teaching practices. This finding underscores the need for professional development programs to enhance teachers' digital competence and foster a positive attitude towards the use of ICT in secondary education<sup>7</sup>.

Fraile et al. (2018) focused on the development of digital competence in secondary education teachers' training. The study highlighted the importance of providing comprehensive training programs to equip teachers with the necessary skills and knowledge to effectively integrate ICT in the classroom. This emphasizes the role of teacher training in shaping positive perceptions towards ICT use among secondary school educators<sup>8</sup>.

Bal-Taştan et al. (2018) investigated the impacts of teacher's efficacy and motivation on students' academic achievement in science education among secondary and high school students. The study demonstrated that teachers' efficacy and motivation significantly influenced students' academic performance. This highlights the potential influence of teachers' perceptions and attitudes towards ICT use on students' learning outcomes in secondary education<sup>9</sup>.

Lau and Yuen (2014) developed and validated a perceived ICT literacy scale for junior secondary school students. The study underscored the importance of assessing students' ICT literacy, which is closely related to teachers' perceptions of ICT use. This finding suggests the need for a comprehensive understanding of students' ICT literacy to inform teachers' attitudes and instructional practices related to ICT integration<sup>10</sup>.

Siddiq et al. (2016) conducted a systematic review of assessment instruments for measuring primary and secondary school students' ICT literacy. The study emphasized the importance of assessing students' ICT literacy to inform instructional practices and curriculum development. This finding suggests that teachers' perceptions of ICT use may be influenced by their understanding of students' ICT literacy levels<sup>11</sup>.

In conclusion, the literature review provides valuable insights into the perception of teachers towards the use of ICT in secondary schools. The insights from the studies emphasize the importance of addressing teachers' digital competence, providing comprehensive training programs, and assessing students' ICT literacy to inform instructional practices. The literature also underscores the potential influence of teachers' perceptions and



attitudes towards ICT use on students' academic achievement and overall learning experiences. While the existing literature review provides valuable insights into the perception of teachers towards the use of ICT, there are several knowledge gaps that warrant further investigation. Firstly, future research should explore the impact of teachers' attitudes and perceptions on student learning outcomes in technology-integrated classrooms. Additionally, longitudinal studies can provide insights into the changes in teachers' perceptions and practices over time, shedding light on the dynamics of technology integration in educational settings and can contribute to a more comprehensive understanding of teachers' perceptions towards ICT use in secondary schools.

## Methodology

This study used a survey as its research method. According to Creswell (2012), survey proposals are tools for quantitative research in which you give a survey or questionnaire to a sample, or a small group of people, and they reflect the intended majority. The purpose of the survey is to find patterns in the beliefs, attitudes, actions, or traits of a population, which is a sizable collection of individuals. For the survey research to accurately reflect the characteristics of the target community, a sizable sample group is essential.

Teachers working in secondary schools of Bageshwar district during the academic session 2023-24 are the targeted participants. 120 teachers from secondary schools of Bageshwar district are included in this study. They were all chosen from ten secondary schools (12 from each school) using a convenience sampling method. There are 45 male teachers in the study, comprising 37.5% of the sample, and 75 female teachers, or over twice as many, making up 62.5% of the study's total sample. According to the report, the youngest age group of 25–30 includes the fewest participants—only 10, or 8.3% of the total participants—followed by 19 teachers in the 30-35 age range, who account for 15.8% of the sample. In contrast, a large proportion of participants—91—fall into the 35–and older age group, which accounts for 75.83% of the study's participants. Teachers' years of experience also differ.

The questionnaire for this research was obtained from the work of Ghavifekr, Athirah and Rosdy (2015)<sup>12</sup>. The questionnaire was split into two sections: the first asked about the gender, age, and teaching experience of the teachers, and the second had twelve structured questions about the teachers that were intended to be used throughout the entire research study. To validate the respondents' answers, the questionnaire included four rating categories on a Likert scale: Strongly Agree, Agree, Disagree and Strongly Disagree. The 12-item questionnaire, which ranges in number from 1 to 12, asks about teachers' opinions about the use of ICT in the classroom for both teaching and learning as well as the components that make it effective. Data will be computed and analyzed using the questionnaire responses by making use of SPSS.

## Data Analysis and Interpretation

Ninety percent of the teachers concurred that lessons aided by ICT lead to better student learning outcomes. On the other hand, 10% disagreed. The findings of this section indicate that the majority of educators concur that using ICT enables them to educate more productive, with an average score of 3.28. While 5% of the teachers disagreed, 95% of the teachers agreed that using ICT to support instruction motivates teachers to continuously refine their own teaching techniques. Most educators understood that using ICT to enhance instruction with more recent resources helps teachers achieve an overall mean of 3.40. 4.16% of teachers disagreed with the 95.83% of teachers who felt that using ICT enhances the quality of instruction. The usage of ICT raises teaching standards, with a mean score of 3.36 overall. While 5.83% of teachers disputed that using ICT to produce teaching materials and resources is helpful for instructional reasons, 94.16% of teachers felt that it does. 3.40 is the overall mean score as well. 10% of teachers disagreed that using technology in the classroom encourages students to participate more actively in the material, whereas 90% of teachers agreed. This section demonstrated how instruction With the use of ICT tools, instruction can be developed and refined, and teachers can make use of this technology to create engaging lesson plans that will capture students' attention and help them achieve a

3.23 overall mean score. When ICT is utilized for teaching, Of the teachers, 78.3% agreed that using ICT for teaching gives them more time to create courses and resources that meet the needs of their students, while 21.66% disagreed. The majority of educators concurred that using ICT enables them to meet students' needs, with a mean score of 2.97. 61.66% of the teachers concurred that they could still teach effectively without using ICT resources. 38.33% of respondents, however, disagreed that effective instruction could still be achieved without the use of ICT technologies. With a recorded mean of 2.7, they maintained in this section that they still support the traditional method of teaching in which the instructor is the focal point of learning and that they can still deliver an effective lesson without the use of ICT. Of the teachers, 95% disagreed that using technology in the classroom takes up a lot of time, and 5% said it was a waste of time. The majority of educators think that using ICT to enhance instruction and with a total mean of 1.74, learning in diverse methods and stating that ICT integration is not a time waster. While 29.16% of the teachers believed that using ICT in the classroom does not help students learn more effectively, 70.83% of the teachers disagreed. The overall averages score in this table is 2.17. 10.83% of teachers agreed with the statement that using ICT in the classroom impairs students' control, whilst 89.16% of teachers disagreed. With a mean score of 1.82, the majority of teachers' responses indicate that when ICT is used in the classroom, classroom management is not out of control. 8.33% of teachers agreed that kids pay less attention when ICT is used in the classroom, whilst 91.66% of teachers disagreed. 13.3% of the teachers agreed with the statement that if ICT is utilized for educational reasons, students will not be interested in the lesson, while 86.6% of the teachers disagreed. The overall mean score in this segment is 1.83.

When it comes to the effective use of ICTs in education, the majority of respondents had positive sentiments. Every item that lists the advantages of using ICT for educational purposes, the respondents tend to agree on the item claims, especially when the respondents has a mean score of 2.82 or higher. More than 90% of the individual items have a maximum mean score point, demonstrating that teachers who participated in this study had an appropriate attitude towards using ICT. The results also show that teachers generally don't agree on the following points: using ICTs for teaching purposes wastes time; students don't work hard for their lessons; classroom management is out of control; and students pay less attention while using ICTs. additionally, students learn best when they don't use ICT.

Items	SA		A		D		SD		Mean	SD
	n	%	n	%	n	%	n	%		
<b>ICT supported teaching makes learning more effective.</b>	48	40	60	50	10	8.33	2	1.66	3.72	0.29
<b>ICT helps teachers to improve teaching with more updated materials.</b>	61	50.83	53	44.16	4	3.33	2	1.66	3.21	0.54
<b>ICT improves the quality of teaching.</b>	54	45	61	50	3	3.33	2	1.66	3.71	0.77
<b>ICT helps to prepare teaching resources and materials.</b>	52	43.33	61	50.83	5	4.16	2	1.66	3.19	0.81
<b>ICT enables the students' to be more active and engaging in the lesson.</b>	48	40	60	50	9	7.5	3	2.5	3.41	0.67
<b>ICT enables more time to cater to students' need.</b>	41	34.16	53	44.16	20	16.66	6	5	3.47	0.79

<b>I can still have an effective teaching without the use of ICT.</b>	24	20	50	41.66	31	25.83	15	12.5	1.88	0.88
<b>ICT in teaching is a waste of time.</b>	2	1.666	4	3.33	64	53.33	50	41.66	2.23	0.83
<b>Students' learn best without the help of ICT.</b>	7	5.833	28	23.33	63	52.5	22	18.33	2.11	0.59
<b>The classroom management is out of control if ICT is used in teaching.</b>	3	2.5	10	8.333	63	52.5	44	36.66	2.66	0.63
<b>Students' pay less attention when ICT is used in teaching.</b>	2	1.666	8	6.666	58	48.33	52	43.33	2.81	0.79
<b>Students' makes no effort for their lesson if ICT is used in teaching.</b>	3	2.5	13	10.83	68	56.66	36	30	1.63	0.88

## Conclusion

This study looked into how teachers' understanding of effective ICT use aides in the teaching and learning processes in secondary schools of Bageshwar district. A descriptive survey design was used to collect the data for this investigation, comprising 120 Participants in this study were teachers from secondary schools in Bageshwar. Regarding the use of ICT for teaching and learning, a greater proportion of respondents gave a high response. More than 80% of the teacher participants were found to concur that ICT can be effectively used for both teaching and learning. It has been found that in the future, people would use ICT for both teaching and learning. The answers from the teachers convey a really strong sense of positivity. According to this study, teachers concur that ICTs help them express their teaching abilities in more engaging and creative ways, and they have the ability to raise educational standards. The majority of respondents felt that their school would provide them with sufficient technical and motivational support, so the results indicated that both perspectives were positively viewed. As a result, teachers will use ICT more frequently as long as the school culture becomes more supportive of integrating ICT into the classroom. To incorporate technology into their classrooms, teachers must have faith in their capacity to support students' technological learning. More professional development is needed to accomplish this goal, with an emphasis on enhancing instructors' abilities to help them get past their fears about utilizing technology. Schools should also provide new instructional strategies and technological assistance so they can maintain control over computer-based learning. All things considered, incorporating technology into teaching effectively necessitates alterations to teachers' perspectives, backgrounds, and educational environments.



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