Research Article

ICT Knowledge and Usage Patterns among Rural Female Undergraduates: A Case Study of Kamrup Rural District, Assam

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Abstract

The study aims to evaluate the knowledge among the students on Information and Communication Technology and their usage of different ICT platforms. A total of 162 college-going female students pursuing graduation from Dakshin Kamrup Girls' College, Mirza of Kamrup Rural district of Assam were selected as the samples for the study. A multistage non-probability sampling technique was employed, with convenience sampling used at the final stage of respondent selection. The results of the study show that 74.19 per cent of the respondents have knowledge of ICT and 51.62 per cent of them have knowledge that mobile, laptops and computers are ICT devices. 58.06 per cent of the respondents use web browsers for educational purposes and 93.54 per cent of them are interested to learn about ICT. The study clearly shows a knowledge gap as almost one fourth (25.81%) of the respondents have less knowledge on ICT and proper intervention may prove to be effective to fulfill the existing gap among the college-going female students of rural areas of Assam.

Keywords: Information Communication Technology, Knowledge, Interest, Usage, College girl, rural area

Introduction

Technology has invaded and changed many aspects of our life to the extent that the environment around us is dominated by technology itself. ICT (Information and Communications Technologies) has emerged as a new component in today's world. Be it education, marketing, agriculture and the corporate sector, ICT is used by all. It has brought a revolution in the lives of people. Those who were deprived of education are provided with education at their house; those who were selling by going to the market, are selling from their work table; those who had a talent but could not show to the world due to lack of proper platform, are performing from any possible place at any possible time. Distance and time have become insignificant to people with the advent of ICT.

ICT includes computers, laptops, mobile phones, internet, various applications which can be used as information sources, digital cameras, television, radios, projectors, etc. These media have brought every information to our hands irrespective of all geographical differences. The role of ICT in education is not a myth now, people are aware about the importance of ICT in the educational sector. Computers, smart classes, and resources have brought a tremendous change to the teaching learning process (Amin and Jan, 2018). There is research supporting the positive relationship between ICT and

education, ICT makes the teaching process more effective and the learning process easier (Ghavifekr and Rosdy, 2015). ICT was introduced to education with the purpose of enhancing the whole educational process. Through ICT, learning can happen any time and at any place. Online course materials, for instance, can be utilized 24 hours every day, seven days a week. There is rich evidence that proves that there is a positive effect on students' academic success with the usage of ICT (Courtney et al. 2022). There are Smart Classrooms with teleconferencing and smart boards that make it simple and convenient for students and teachers to communicate simultaneously and learn practically. It is because of ICT that learning and teaching no longer rely solely on printed materials. Then there is the Internet, which is full of numerous resources, including video clips, audio recordings, visual presentations, and many more. ICT also has brought inclusion in classroom teaching; students with special needs are no longer a problem or issue. There exist various ICT tools which are specifically designed only for the purpose of providing education to students with special needs. Another benefit of ICT in education is that it promotes knowledge retention among the students. According to Edgar Dale's Cone of Experience, it was theorised that learners retain more information by what they 'do' rather than what they 'hear', 'read' or 'observe'. It was stated by him that learners can retain 10% of what they read, 20% of what they hear and 30% of what they see. And 50% when they see and hear, this opportunity is provided by the ICT tools (Gangadharan et al., 2024). Smart boards, projectors, and electronic textbooks let the students see and hear through audio-video clips or explanations. In this continuum, ICT also provides scope to the students to participate in various activities where they can learn by doing (Ratheeswari K. 2018). Preparing class projects, presentations, exhibition models, etc., give them firsthand experience on the topic/subject. Therefore, the role that ICT is currently playing in enhancing the teaching-learning process in the educational sector cannot be denied.

One major point that needs to be considered while incorporating ICT in education is that the teachers as well as the students must be digitally literate. Digital literacy is an individual's ability and capacity to find, utilise and communicate any information through typing or digital platforms (Yazon et al., 2019). Though digital literacy is a must in order to incorporate ICT into learning, it is also necessary to consider that people are adopting digital learning methods so that they can take the benefits of ICT. Thus, digital literacy is mandatory to utilise ICT while in turn ICT promotes digital literacy among people.

But the talk of digital literacy is a far cry in rural areas; there is a lack of sufficient infrastructure, adequate teachers, and societal pressures, which often create barriers to educational opportunities. Outdated learning materials, over-crowded classrooms, and the added responsibility of household tasks leave little time for students to focus on their studies. The current situation shows that rural education still remains very inadequate. There are very limited Government schools and colleges in certain areas, which forces children to travel long distances to access these facilities. Additionally, most schools in these areas do not offer computer education (Roy, 2012). The importance of having adequate knowledge on ICT for the students, especially from rural areas who have limited access to the internet, is very crucial. However, even today, there are students who are unaware of ICT or do not utilize it. There are also students who use ICT regularly but are unaware 'what actually is ICT';

they are unaware that even the Youtube link that is provided by their teacher is actually an ICT tool. There are students who are not even familiar with the term 'ICT'. This surely reflects that students' knowledge of ICT is still poor (Woreta et al., 2013) and negligent.

Theoretical Framework

The present study on the knowledge, awareness, and usage of Information and Communication Technology (ICT) among rural college-going female students in Assam is grounded in an integrated theoretical perspective that combines Edgar Dale's Cone of Experience, Rogers' Diffusion of Innovations Theory, the Digital Divide Theory, and the Technology Acceptance Model (TAM). Dale (1946) emphasised that learners retain more knowledge through experiential and multisensory engagement rather than passive learning modes such as reading or listening, suggesting that ICT tools—like multimedia simulations, interactive videos, and digital presentations—can enhance conceptual clarity and improve knowledge retention, particularly in resource-constrained rural contexts (Gangadharan, Thangavel, and Selvan, 2024). However, while ICT has the potential to create richer learning experiences, its adoption in rural areas follows a social diffusion process, as described by Rogers (2003), who explained that innovations spread through stages of knowledge, persuasion, decision, implementation, and confirmation. According to this model, rural students may fall into different adopter categories—innovators, early adopters, or late majority—depending on factors such as relative advantage, compatibility with their needs, and perceived complexity. Yet, adoption is not only a matter of individual choice but is deeply shaped by structural inequities, which is where the Digital Divide Theory becomes critical.

Van Dijk (2006) highlighted that beyond mere access to technology (the first-level divide), there exists a second-level divide concerning digital literacy and skills, and a third-level divide related to the actual outcomes gained from ICT use. This is highly relevant for rural female learners, who may have limited infrastructural access, face socio-cultural barriers, and lack institutional support, leading to uneven ICT exposure (Roy, 2012). Even when access is available, adoption depends on students' perceptions, as articulated in the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use significantly influence individuals' intention to use technology (Davis, 1989). In rural settings, if students believe that ICT improves their educational outcomes and find it easy to use on familiar devices like mobile phones, their willingness to adopt it increases despite infrastructural constraints (Kori et al., 2015). Thus, by combining Dale's focus on experiential learning effectiveness, Rogers' understanding of social adoption, van Dijk's recognition of socio-economic barriers, and Davis' emphasis on motivational perceptions, this study takes a holistic view of how ICT knowledge, awareness, and usage emerge within the unique socio-cultural and infrastructural realities of rural Assam. This integrated theoretical lens highlights that ICT adoption is not merely a cognitive process but an interplay of educational, social, structural, and psychological factors that collectively shape digital inclusion and learning outcomes for rural college female students.

Rationale

Information and Communication Technologies (ICT) play a significant

role in shaping contemporary social and institutional systems. People are constantly seeking information about ICT, including its advantages, disadvantages, importance, and effects, as well as guidance on how to utilize it in various fields. India, being a young country with 66 per cent of its population under 35 years of age, has provided a wider scope for new technologies to flourish in the country. Hence, the use or adoption of ICT is widespread throughout the country. Information and Communications Technology has the potential to change the whole scenario of any sector in the country. Moreover, education is the backbone for the development of any country, as it helps in the human resource development of the people, leading towards success in future (Al-Shuaibi, 2014). Therefore, the role that ICT plays or shall play in education, if properly adopted, would be phenomenal. It has gradually but surely transformed education from a traditional to a practical one, impacting teaching methods, learning approaches, scientific research, and information access. In addition to providing education to students in a formal setting, ICT is also facilitating the learning of individuals who are working but still wish to study, as well as those who have dropped out (Zafar, 2019). The role of ICT in education cannot be neglected in today's scenario, and it is essential for students to have a basic level of knowledge of ICT so that they can enjoy the benefits of the same. However, it is essential to remember that not all sections of society or all parts of the country have the privilege of access to all new technologies, including ICT. The rural part of the country is often an underprivileged section, lacking access to essential resources such as food, education, and medical facilities. However, within all the educational hurdles, there is a glimmer of optimism. Creative teaching approaches, government support, and the growing integration of technology, i.e., ICT, are paving the way for a fairer education system in remote areas. Considering the importance of ICT for rural students, especially female students, who are the most deprived gender in terms of education, as reflected in the rural literacy rates of females at 54.6% and males at 82.1% (2021). The researcher conducted the current study with respondents from a rural background.

Review of Literature

Several studies have highlighted the pivotal role of Information and Communication Technology (ICT) in transforming teaching and learning processes, yet their findings also reveal variations in access, perception, and utilisation across different socio-cultural contexts. Sarma and Sarma (2025), in their study conducted in Assam, found that language proficiency plays a major role in bridging the digital gap among students. The results showed that students with good language proficiency have better digital access than tribal and rural students with average language proficiency.

Building on these findings, Santhumayor and Jyothi (2023), in their case study at Milagres College, Mangaluru, reported that the integration of ICT significantly improved the teaching–learning atmosphere, fostering greater engagement among both teachers and students. This finding aligns with broader global developments where ICT is recognised as an enabler of interactive and collaborative learning environments. Similarly, in a study conducted in Jorhat and Golaghat districts of Assam by Baruah and Borah (2023) involving 120 rural participants, it was found that 56.70 per cent of respondents had a medium level of

media possession and had very little participation in ICT training.

Similarly, Dar and Nikoo (2022), studying 200 college students in Kashmir, found that while 40.5% of respondents had highly positive perceptions of learning through ICT, a majority (54.5%) demonstrated only average perceptions, and a small percentage (5%) showed low interest. This suggests that even when ICT is accessible, there are variations in learners' attitudes, possibly influenced by digital literacy, prior exposure, or infrastructural challenges. In the same year, another study by Boruah et al. (2022) was conducted on 120 rural residents from the Jorhat and Golaghat districts of Assam. It was found that 62.50 per cent of the respondents were aware of social networking apps, 34.17 per cent were aware of financial apps like YONO, signifying a lack of digital awareness among the rural population in the districts.

Choudhury and Ahmed (2021), in their study conducted in Assam, found that there has been a significant increase in the use of smart classrooms, online learning platforms, and educational mobile applications, and this shift began during the COVID-19 pandemic.

In the West Bengal context, Molla (2020) explored the attitudes of college students toward ICT in higher education and observed that female students had more positive attitudes toward ICT usage compared to their male counterparts. This finding is particularly significant in the Indian context, where gendered socio-cultural factors often limit female access to technology. It suggests that when given equal opportunities, women may be more motivated to engage with ICT.

However, Sharma and Poonam (2020) found a more complex picture in their study across three government colleges in Himachal Pradesh. While 85% of students reported learning ICT through self-study, most primarily used the internet for non-academic purposes, such as chatting and gaming, rather than accessing educational materials. This points to a critical gap between ICT availability and its meaningful educational use, indicating the need for structured digital literacy programs.

Having described the major findings, it is important to critically assess the scope and limitations of the reviewed literature. The reviewed literature underscores the transformative potential of ICT in enhancing teaching and learning experiences; however, several critical gaps remain unaddressed, particularly in the Indian rural context. Studies such as those by Santhumayor and Jyothi (2023) and Ghavifekr and Rosdy (2015) have demonstrated the positive impact of ICT integration on the learning environment, but their research was conducted in relatively well-resourced urban or semi-urban institutions with minimal infrastructural limitations. Consequently, these findings may not fully capture the realities of rural educational settings, where access to technology, institutional support, and digital infrastructure remains inadequate.

Furthermore, Dar and Nikoo (2022) and Sharma and Poonam (2020) found that, although students have access to ICT, many use it mainly for non-academic purposes, such as chatting and gaming, rather than for learning. These studies do not delve into the socio-cultural, infrastructural, and motivational barriers that limit educational use of ICT. Additionally, Molla (2020) identified gender differences in attitudes, with female students often more willing to use technology. However, little research investigates rural female learners, who face additional challenges due to both their location and gender norms.

Another key limitation of the existing literature is its narrow scope. Most studies examine attitudes, perceptions, or usage separately, rather than providing an integrated understanding of ICT-related knowledge, awareness, interest, and actual usage patterns. Moreover, the persistent digital divide—including gaps in access, disparities in digital literacy, and unequal educational outcomes—has not been sufficiently addressed for rural female college students. Even where ICT is available, over-reliance on self-study, as observed by Sharma and Poonam (2020), indicates a lack of robust institutional support, resulting in superficial rather than substantive ICT engagement.

Gender is an especially underexplored dimension. Molla's (2020) finding that female students have a more positive attitude towards ICT suggests that women in rural settings could be highly motivated to adopt technology if provided with adequate access and support. However, none of the reviewed studies comprehensively investigates how socio-cultural norms, infrastructural barriers, and motivational factors interact to shape rural female students' ICT adoption. Moreover, the literature fails to address how the digital divide specifically affects rural learners—particularly female students—in terms of access, digital literacy, and perceived usefulness of ICT for academic growth.

Therefore, a clear research gap exists in comprehensively investigating how rural college-going female students in underserved regions, such as Assam, know, perceive, and use ICT, and how socio-economic and cultural barriers influence their engagement. By situating the research in a rural and gendered context, the present study fills this gap by offering an integrated analysis of ICT knowledge, awareness, usage patterns, and interest levels. This approach contributes to a more nuanced understanding of the barriers and opportunities for ICT adoption in marginalised communities, paving the way for more inclusive digital education strategies.

Research Questions

1. What is the level of knowledge about ICT among college going female students of rural areas of Assam?
2. How much knowledge do the college going female students of rural areas of Assam of different devices that constitute ICT?
3. What is the usage level of ICT among college going female students in rural areas of Assam?

What is the relation between knowledge and the use of ICT among the students?

Objectives of the study

1. To study the existing knowledge of the respondents on Information and Communications Technology
2. To study the usage of Information and Communications Technology among the respondents
3. To know about the interest of the respondents towards learning about Information and Communications Technology
4. To examine the relationship between ICT knowledge and interest in learning ICT among respondents

Operational Definitions

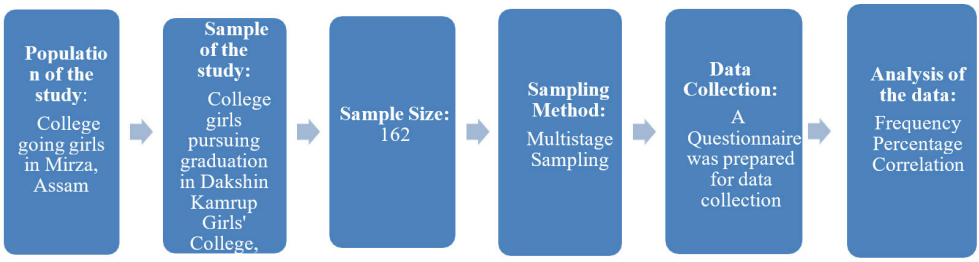
Knowledge: In this research, ICT knowledge is assessed based on respondents' answers to specific questions, including the complete meanings of ICT, WWW, NDLI, Wi-Fi, and

their comprehension of ICT's primary objective. A respondent is deemed informed if she accurately responds to most of these knowledge-related questions.

Interest: In this research, interest is evaluated using a direct self-report question that asks students if they wish to learn about ICT. A high level of interest is deemed present when a respondent indicates a positive desire to investigate ICT further.

ICT Usage: In this research, the usage of ICT is assessed through the self-reported use of devices (mobile phones, laptops, computers) and platforms (such as web browsers, YouTube, Google Meet, MS Word, Google Classroom, etc.) in their academic tasks. Increased utilisation suggests consistent engagement with various ICT tools for educational reasons.

Methodology



This research utilised a quantitative approach to thoroughly investigate the knowledge, utilization, and curiosity regarding Information and Communication Technology (ICT) among college-attending females studying in UG 1st, 2nd and 3rd Year programme during 2023-2024 in the Mirza region of Assam.

Sampling Frame

The sampling frame consisted of all undergraduate female students enrolled in Dakshin Kamrup Girls' College, Mirza during the academic year 2023–2024.

Research Location and Sampling

The study adopted a multistage sampling design. In the first stage, rural colleges were identified from selected districts of Assam based on accessibility. In the second stage, the only female college was identified and selected from the district. In the final stage, respondents were selected using convenience sampling based on their availability and willingness to participate in the study.

Instrument for Research and Gathering Data

A structured questionnaire was created based on extensive literature review and was examined by the experts to ensure the content validity of the tool. The tool for data collection, featuring closed- ended questions was developed. The tool assessed three main dimensions, that is, understanding of ICT (definitions, elements, conceptual clarity), utilisation of ICT tools and platforms for educational objectives, and desire to understand information and communication technology. The survey was conducted online via Google Forms to ensure the greater response. Data was gathered throughout the academic year 2023–2024.

Analysis of Data

The collected data were analysed by using descriptive statistics (frequencies, percentages) to summarise respondents' knowledge, usage behaviours, and levels of interest. A Pearson correlation analysis was performed to investigate the relationship between ICT knowledge and interest in learning ICT. The data were processed using the Statistical Package for the Social Sciences (SPSS).

Analysis and Results

Objective 1: To study the existing knowledge of the respondents on Information and Communications Technology (ICT)

Table - 1: Administration and scoring

Sr. No.	Category	Range
1.	Knowledgeable	(X+SD) and above
2.	Less knowledgeable	Below (X-SD)
3.	Less knowledgeable	42

Table 1 presents the criteria used for categorising respondents as knowledgeable and less knowledgeable. The total score obtained in the scale indicates respondent's knowledge on ICT. On the basis of the mean (X) and standard deviation (SD) of the obtained scores, respondents were classified in the two categories.

General Knowledge Level: Table 2 shows that out of 162 respondents, 120 (74.19%) were found to be knowledgeable, and 42 (25.81%) were found to be less knowledgeable. This indicates a significant knowledge gap that needs targeted intervention

Table - 2: Frequency distribution of the respondents according to their knowledge of ICT (n=162)

Sr. No.	Knowledge on ICT	Frequency (f)	Percentage
3.	Knowledgeable	120	74.19
4.	Less knowledgeable	42	25.81

(n=162)

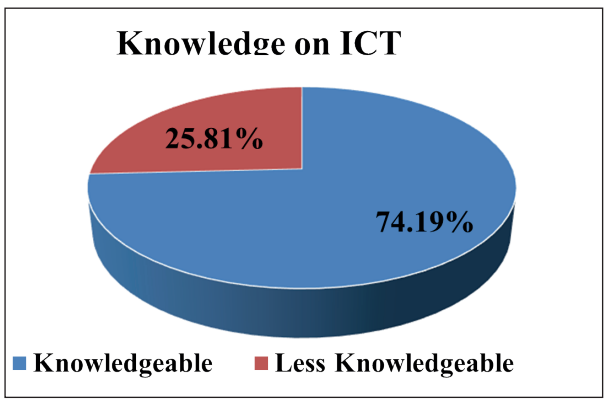


Fig. 1: Percentage distribution of respondents according to their knowledge on ICT

Conceptual knowledge: A high percentage of respondents were familiar with basic ICT terms and purposes. However, 25–37 per cent lacked knowledge on certain key terms like NDLI, WWW, and Wi-Fi, indicating the need for focused knowledge sessions.

Table - 3: Frequency and percentage distribution of the respondents according to their knowledge level regarding ICT

(n=162)

Sr. No.	Questions	Correct		Incorrect	
		f	%	F	%
1.	What is the full form of ICT? (MCQ)	133	82.25	29	17.75
2.	What is the full form of WWW? (Fill in the blanks)	120	74.19	42	25.81
3.	What is NDLI? (MCQ)	102	62.9	60	37.1
4.	What is the full form of Wi-Fi? (MCQ)	110	67.74	52	32.26
5.	What is the main purpose of ICT? (MCQ; can select >1)	136	83.87	26	16.13

Table 3 reveals the frequency and percentage distribution of the respondents according to their knowledge level regarding ICT. A high majority (82.25%) of the respondents had knowledge about the full form of ICT, whereas less than one-fifth (17.75%) of the respondents did not know the full form of ICT. More than the majority (74.19%, 62.9% and 67.74%) of the respondents had knowledge about the full form of WWW, NDLI and Wi-Fi, and a high majority of the respondents (83.87%) had knowledge about the main purpose of ICT. One-fourth (25.81%) of the respondents did not know the full form of WWW, and more than one-third (37.1% and 32.26%) of the respondents had no knowledge of NDLI and Wi-Fi. The finding suggests an urgent need for knowledge enhancement on ICT among the students.

Objective 2: To study the usage of Information and Communications Technology among the respondents

Device Knowledge: Figure 2 shows that 51.62% of respondents had knowledge that mobile phones are ICT platforms, and 48.38 per cent recognised laptops and computers as ICT tools. Knowledge of respondents regarding ICT platforms

(n=162)

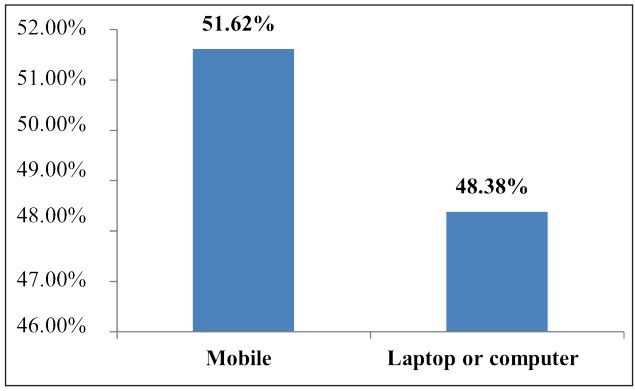


Fig. 2: Percentage distribution of respondents according to their knowledge regarding ICT platforms

Analysis of the data on the ICT platforms of respondents revealed that 51.162 per cent, i.e., the majority of respondents, had knowledge that mobile is an ICT platform, and 48.38 per cent of the respondents had knowledge that laptops or computers are also considered as ICT platforms.

Application Usage for Educational Purposes

Figure 3 reveals that students used a range of ICT tools in their academic life:58.06 per cent used Web browsers, 51.61 per cent used YouTube, 29.03 per cent used Google Meet, 25.80 per cent used MS Word, 16.12 per cent used Google Classroom, 12.90 per cent used MS Excel, 9.67 per cent used Photoshop and PowerPoint. The data reflects regular engagement with ICT for academic purposes, though usage varies significantly by tool.

(n=162)

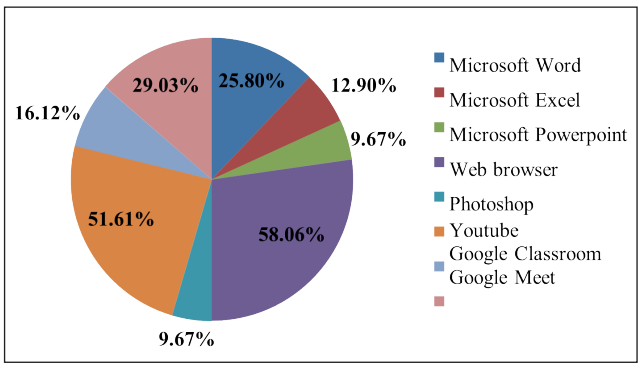


Fig. 3: Percentage distribution of respondents according to their usage pattern of ICT application for educational purpose in day-to-day life

Figure 3 revealed that a little less than the majority (58.06%) of the respondents used Web browsers, 51.61 per cent of the respondents used YouTube, 29.03 per cent used Google Meet, 25.80 per cent used Microsoft Word, 16.12 per cent used Google Classroom, 12.90 per cent of the respondents used Microsoft Excel and 9.67 per cent i.e. least percentage of the respondents used Photoshop and Microsoft PowerPoint for educational purpose in day-to-day

life. This data clearly revealed that the respondents use various ICT applications for educational assistance on a daily basis. The data from Figure 2 and Figure 3 indicate that the respondents use ICT applications on mobile phones and laptops or computers almost daily for educational purposes.

Objective 3: To know about the interest of the respondents towards learning about Information and Communications Technology

Figure 4 indicates that A high majority (93.54%) of respondents expressed interest in learning ICT. Only 6.45% were not interested, which, although a minority, suggests the need to explore barriers such as access, language, or self-confidence.

Interest of the respondents towards learning about Information and Communications Technology

(n=162)

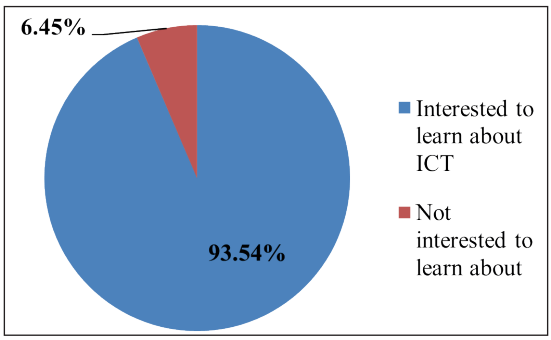


Fig. 4: Percentage distribution of respondents on the basis of their interest towards learning about Information and Communications Technology

Figure 4 clearly revealed that a high majority, i.e. 93.54 per cent of the respondents were found to be interested in learning about Information and Communications Technology. Whereas, only 6.45 per cent of the respondents were found to be not interested in learning about ICT. Though the percentage of uninterested respondents were less, it is a matter of concern as to what might be the reasons behind their uninterest in learning about ICT.

Objective 4: To examine the relationship between ICT knowledge and interest in learning ICT among respondents.

Table - 4: Correlation between ICT Knowledge and Interest in Learning ICT

(n = 162)

Groups	Correlation Coefficient (r)	p-value
ICT Knowledge	0.33	0.0001
Interest in ICT		

There is a moderate positive correlation between the knowledge of ICT and the interest in learning ICT among rural college going female students. This suggests that as the knowledge of ICT increases, so does the interest to learn more about it. The p-value is well below 0.05, indicating that the result is

statistically significant—the observed relationship is unlikely to have occurred by chance.

Discussion

This study sought to evaluate the knowledge, application, and enthusiasm for Information and Communication Technology (ICT) among college-aged females from rural Assam. The results indicate positive levels of knowledge and involvement; however, they also highlight significant gaps in knowledge and limited usage patterns that warrant focused attention.

ICT Knowledge: This aligns with the findings of Dery et al. (2016), who noted that students in comparable educational contexts exhibited relatively high levels of computer use and knowledge. The information suggests that while many students have basic ICT skills, a considerable number still need additional experience and support.

The outcomes were diverse when analysing particular aspects of ICT knowledge. A large proportion of students accurately recognized the complete form of ICT (82.25%) and its primary function (83.87%). Nonetheless, there were noticeable conceptual gaps in their comprehension of essential terms like NDLI (37.1% incorrect) and Wi-Fi (32.26% incorrect), and a quarter were unable to accurately explain WWW. These discrepancies indicate a limited understanding of ICT basics, even with regular use of ICT tools, emphasizing the necessity for organised ICT training and hands-on examples.

These results correspond with Edgar Dale's Cone of Experience, highlighting the importance of experiential learning. Students might gain from interactive ICT experiences that enhance long- term memory and practical understanding, rather than depending only on passive exposure or disjointed learning.

Recognition and Utilisation of ICT Platforms: The research indicated that 51.62 per cent of participants acknowledged mobile phones as ICT devices, while 48.38% regarded laptops/computers as ICT platforms. This indicates a moderate degree of knowledge, corroborating the results of Verma et al. (2018), who observed similar patterns among students in Hungary and India.

Concerning ICT usage habits, a majority of students utilised popular platforms for academic assistance. The tools that were most utilised included web browsers (58.06%) and YouTube (51.61%), along with collaborative or productivity applications such as Google Meet (29.03%), Microsoft Word (25.80%), and Google Classroom (16.12%). A smaller percentage of students engaged with tools such as MS Excel (12.90%) and Photoshop/PowerPoint (9.67%), indicating that although ICT is in use, its implementation appears restricted in extent and probably informal or unstructured. These results suggest that although students encounter ICT tools during their everyday academic activities, the extent and depth of their usage are limited. The adoption is probably motivated by urgent academic requirements instead of complete digital fluency, highlighting the need to integrate hands-on ICT training into the curriculum.

Strong Interest for ICT Education: A positive finding from the research is that a significant majority (93.54%) of participants showed a desire to learn more about ICT. This strong curiosity and motivation signal potential for growth, indicating that rural students are willing to incorporate digital literacy into their academic experience when given adequate support. This aligns with Kori et al. (2015), who discovered that students are driven by both intrinsic curiosity and external objectives—like

career advancement, skill improvement, and obtaining superior job prospects. This significant interest highlights the possibility of ICT-driven empowerment among rural women. Conversely, 6.45% of the students indicated a lack of interest in learning about ICT. Even though this percentage is quite small, it is crucial to explore the root obstacles—which could involve limited access, technology apprehension, language barriers, or low self-assurance in technical skills. Tackling these issues with inclusive training initiatives and customised learning methods could transform passive learners into engaged digital contributors.

The findings also suggest that knowledge and interest are both positively correlated; knowledge acts as a motivating element; as rural female college students gain a better understanding of ICT concepts, they are increasingly inclined to investigate and enhance their comprehension. This highlights the significance of basic ICT education as a driving force for ongoing learning and involvement in technology-focused skills. Collectively, these results support the application of Rogers' Diffusion of Innovations Theory, showing that the majority of respondents are classified as early or early majority adopters. With proper institutional and infrastructural backing, they can progress further on the innovation adoption curve.

To address the recognised knowledge gaps and encourage wider and more impactful utilisation of ICT, focused initiatives like: workshops on digital literacy, practical training workshops, and integration of ICT modules into the curriculum are essential in equipping students, particularly in underserved rural areas.

Limitations

ICT knowledge in the present study was assessed primarily through recognition of commonly used acronyms. While this provides an indication of familiarity, it may not fully capture deeper conceptual or operational knowledge of ICT.

The present study is limited to only the Kamrup Rural district of Assam and only the female students of the district were selected for the study.

The absence of pilot testing and reliability analysis is acknowledged as a limitation.

Conclusion

ICT has been a growing trend since the 2000s and the COVID-19 has given it a push to grow even widely and exponentially. There is nothing that cannot be done online today with education being one of the areas where ICT has taken over. Online classes through Google Meet, Zoom, Google Classroom, e-content have filled up the market so large that the students are more inclined towards learning online from home with a familiar environment rather than coming to class and sitting in the classroom for a lecture. Students are adapting to these online eras at a faster rate and they are learning new things every day, every hour and every minute through ICT. The revolution that ICT has bought is still in the face of transition, the end of this transition is yet to be seen but as per the ongoing scenario, this study can conclude that the female students of rural area of Assam have knowledge about ICT, they also had knowledge that mobile phones, laptops and desktops are ICT platforms and accordingly they utilise the same. The respondents also had knowledge about various ICT based applications like Google Meet, Google Classrooms, MS Office, Photoshop, YouTube, etc.

and used the same for educational purposes. The moderate yet significant correlation highlights the need for educational interventions that not only increase access to ICT but also actively build knowledge to spark and sustain learner interest.

Future Research Scopes

Longitudinal studies on digital transition are required to understand the process of digital transition and how it affects life.

Same study including both genders, age groups and in different geographical locations is essential to fully understand the usage of ICT across all demographics.

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