

Usages of ICT in English Teaching at Secondary School Level: A Study in Lakshadweep

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Abstract

This research analyzes ICT utilization in the teaching of English at the secondary educational level within Lakshadweep geographical area. Research data were gathered from twenty-one purposively selected English instructors utilizing a semi-structured sample interview schedule (ten open-ended questions). Interview transcripts were reviewed, labelled, coded, and examined thematically; output of identifying relevant themes created the frequency by which they occurred, expressed in approximate percentages. Findings indicated that ICT integration is prevalent, as there is an abundance of regularly utilized ICT resources such as smart boards/multimedia/access to the Internet, sufficient infrastructure support was provided for ICT implementation, and students were highly engaged. However, one consistent barrier experienced by most instructors was the absence of timely and ongoing professional development that targets newly emerging ICT. Instructors are generally proficient with most ICT tools but the lack of continuous capacity building limits their deeper pedagogical integration into the classroom. Overall, this research indicates that ITC capacity building for English educators in Lakshadweep requires continuous professional development through planned educational programming on utilizing technology effectively and transformatively.

Introduction:

The fast growth of digital technologies has changed the way people around the world expect to learn and teach in schools. In addition to this, many countries are developing national policy frameworks that require utilizing ICT as a required structural element of quality education rather than an optional supplement. In India, the National Education Policy, or NEP, 2020 places a high priority on technology-based learning and development of digital content and capacity building for teachers so as to effectively increase educational outcomes and equity throughout the country's public school systems. On a global level, documents and guidance from UNESCO emphasize technological innovation to create inclusive and resilient education systems through cooperative policy action to maximise the use of ICT for improving pedagogy. Together, these policy movements create both a reason and a demand for empirical research to examine actual uses of ICT in classrooms, especially in areas as compared to urban locations where access to and connectivity to local products vary widely.

Numerous studies have shown that ICT can enhance language instruction by increasing student participation, providing input in more than one mode of communication (e.g., writing, reading), and allowing for new ways

to interact with teachers/students and assess student performance. In addition to large-scale evaluations of student achievement and education research, there is a link between the use of ICT for reading and literacy, as demonstrated through comparative assessments. For instance, studies of PISA data have identified relationships between the digital skills and attitudes of students, along with their ability to read, and their performance on reading assessments; this is particularly relevant to English language instruction because more of the materials used to teach English now incorporate digital texts and include tasks that require learners to read in more than one way. Additionally, research conducted within South Asia and elsewhere in developing countries (i.e., areas with limited access to advanced infrastructure), supports the existence of barriers such as an unreliable or no internet connection, insufficient technology at home/school, an uneven level of teacher preparation (inadequate training, lack of instructional materials and resources), and the digital divide based on differences in location (e.g., urban vs. rural) that impede the use of ICT. Thus, this research supports the idea that simply installing technology (hardware or connectivity) does not ensure that ICT will bring about the desired change in pedagogy; rather, it will depend upon how well prepared teachers are to teach with ICT, how relevant the curriculum is to the local context, and/or how well the administration supports the use of ICT in their classrooms.

Lakshadweep provides an unusual parameterized environment to examine the role of ICT in the teaching and learning of English language as defined by recent government reports on the current status of digital enhancements in schools throughout Lakshadweep. Digital projects have included elements such as smart classrooms, internet access via satellite & fibre, and the outfitting of classrooms with devices. However, the geographical isolation, limited physical structures, and unique socio-linguistic context of the islands present challenges and potential advantages for successful implementation that would not be applicable in mainland or national studies. Furthermore, the state and regional programmes, such as the long established Kerala's IT@School and KITE initiatives, give models of curricula content and delivery (e.g. broadcast/cable) and building teacher capacity/completing teacher training that have sometimes been provided to nearby island administrations offer models that could be considered for collaborative or scalable partnerships however they also highlight the need for assessment of applicability and locality of implementation.

The research is directed at determining how secondary English teachers in Lakshadweep view, access, and utilize ICT tools in their teaching; what kinds of teaching practices and resources are actually used; and what types of infrastructural, institutional, and socio-cultural barriers or facilitators exist for effectively integrating ICT into English teaching. Using a context-focused field study with an applied teacher training and policy-oriented approach, this project will (a) document current usage and barriers; (b) identify the degree to which local practice aligns with national/global policy expectations; and (c) generate actionable recommendations for teacher development, resource planning, and scalable interventions for remote island schooling. In addition to helping address an empirical gap related to ICT in English teaching in a remote and relatively less studied geographical location, this research will provide evidence that policymakers, teacher educators, and local

administrators can utilize to help ensure that pedagogically effective and equitable investments have been made in ICT.

This study arises from three perspectives; government national policy mandates, transformation of pedagogy within English as a Second Language (ESL) and local context of Lakshadweep. Although the National Education Policy (NEP 2020) supports the use of technology as an approach to support equitable access to education, digital literacy and improved educational outcomes, the success of ICT depends heavily on the existing local physical infrastructure; the preparedness of teachers; and adaptability to the local context. Currently, there exists a gap in the research relating to the use of ICT in ESL in the island territories and remote Regions. Most of the current research on the use of ICT in ESL has been conducted in urban or semi-urban settings on the mainland. The conditions found on the islands are unique and can not be understood from the perspective of the mainland. In addition, as English is a subject of study and means to achieve upward academic achievement and professional transition, students of ESL require access to rich linguistic input. ICT has the potential to provide access to this type of input by using digital platforms (multimedia; digital reading material; and interactive resources. The research is appropriate because it aims to provide a significant contextual and empirical gap filled with localized data, creating a foundation for developing teacher training, infrastructure planning, and policy-making decisions specific to remote and limited-resource educational contexts.

Review of Related Literature:

The relationship between ICT integration into secondary educational settings has received considerable research attention internationally and nationally. There are three primary areas of concern surrounding the integration of ICT into secondary education; availability of infrastructure, teacher readiness, and effective pedagogical use of technology. In the study “ICT Integration into Education: A Study of ICT Integration into Secondary Schools in Kerala,” Anil & Jayakumar (2019) found that while activities such as IT@School provided basic ICT infrastructure to both urban and rural secondary schools, classroom usage of ICT resources remained low due to lack of both adequate connectivity and devices as well as the lack of meaningful pedagogical training for teachers. In addition, their findings suggest that rural and urban settings continue to have large digital divides. Furthermore, Bhandari (2023) found that although teachers in Nepal reported recognizing the benefits of using ICT in lesson planning and assessment purposes, their use of ICT in lessons was limited by both the lack of infrastructure and appropriate teacher preparation and training. Thus, both of these studies highlight the gap between the availability of resources for integrating ICT into education and the meaningful use of resources to develop effective pedagogy in teachers.

Research on student perspectives has also been conducted in ICT-related studies. For example, Fahad K. P (2022) studied higher secondary students in Kozhikode and Malappuram and found that learners had positive attitudes about learning through ICT; specifically, they agreed that it improved their engagement and

efficiency while learning but had issues such as inconsistent internet connectivity and insufficient access to hardware. Kumari and Shekhar (2023) examined ICT use in English classes during the post-COVID period in Bihar, and though teachers supported using ICT to maintain student engagement within the online learning environment, many were resistant to leaving their traditional pedagogies behind. Collectively, these results suggest that although there is an overall perception among stakeholders that ICT is useful, structural and attitudinal barriers still impede its implementation.

International research also supports the academic benefits of ICT literacy for learning English. For instance, Wang and Liang (2024) analyzed PISA 2018 data from East Asia and found a statistically significant relationship between students' levels of ICT literacy, their attitudes towards technology, and their achievement on digital reading assessments in English. Furthermore, Rahmawati (2024) studied the effective use of overhead projectors, YouTube videos, and other online learning management systems in higher secondary schools in Indonesia, but still found that inconsistent internet access was an obstacle. Taken together, these studies illustrate that ICT literacy can facilitate improvement in students' English language ability through the support of adequate infrastructure (internet connectivity) and digital competence.

In both systematic and teacher-focused research, there is a clear agreement that professional development is vital. A systematic review of developing countries by Prasad and Joshi (2023) suggests that ICT positively impacts both engagement and academic achievement but relies heavily on the presence of trained teachers and supportive policies. Nayak et al. (2025) indicate that prospective English teachers from Odisha know enough about the benefits of ICT, but they do not have enough time for hands-on training. This underscores that this should be a pillar of teacher education and that there needs to be a structured road map for it. Pareek and Parashar (2025) found that there are many unevenly distributed digital resources in secondary schools in northern India and that teachers need to continue developing professional skills. Pandey and Poudel (2025) state that there are learner-centered teaching strategies that can be implemented through the use of ICT; however, the lack of access to devices creates a digital divide. Kundu and Bej (2021) revealed that only 41% of private high schools provide any type of integration for ICT; in addition, the training for those teachers who are offered training was primarily sporadic rather than continuous.

The body of literature examined has produced consistent findings on positive teacher and student perceptions of ICT, measurable pedagogical benefits of ICT, and ongoing challenges with respect to ICT infrastructure, especially teacher training. However, while considerable research has occurred in mainland and urban contexts, there are very few studies conducted in geographically isolated communities, like Lakshadweep. The current study fills this gap by examining the use of ICT in secondary English classrooms within rural schools on remote islands where reasonable access to ICT infrastructure is available but ongoing and systematic training of teachers who use ICT in the classroom is still a significant issue.

Objectives of the Study

1. To assess the extent and nature of ICT integration in English teaching at the secondary school level in Lakshadweep.
2. To examine the ICT competencies and attitudinal dispositions of secondary school English teachers toward technology-mediated instruction.
3. To identify the pedagogical, technical, and institutional barriers that hinder the effective use of ICT in English classrooms.
4. To analyze the availability, accessibility, and utilization patterns of ICT infrastructure in secondary schools of Lakshadweep.
5. To propose context-specific recommendations for strengthening ICT integration in English language classrooms within remote island educational settings.

The goal of this research is to gather qualitative data from a variety of sources which enable researchers to better understand how technology (ICT) is used in secondary schools in the Laccadive Islands to teach English. The subject of this research are all secondary level English teachers on the Islands, with an estimated total population of 21. In order to obtain a purposive sampling of 21 teachers who had experience using ICT in the classroom, all secondary schools on the Islands were listed, and names of teachers were randomly selected from these lists.

This study employed semi-structured interviews with 10 open-ended questions consistent with the study's objectives. The interview included questions related to ICT practices, competencies, attitudes, infrastructure, barriers to effective implementation and other areas related to the integration of ICT in the teaching of English in the secondary school level in the Laccadive Islands.

After obtaining consent from the individual participating in the interview, each individual's interview response was recorded via audio tape and transcribed verbatim to maintain accuracy and document of all interviewee(s) responses. In addition to transcribing the responses, each response was then analysed by utilizing qualitative data analysis strategies, such as thematic analysis (coding, categorisation and identification of patterns) in order to gain a deeper understanding of teacher experience in using ICT in the Laccadive Islands, as well as to gain insight into specific aspects of integrating ICT into the delivery of English instruction.

The Data's Analysis and Interpretation

After transcribing, coding and thematically analyzing the qualitative data gathered from 21 English Teachers in Secondary schools located on Lakshadweep, a frequency analysis was done on different responses to estimate approximate percentages. The data identified a predominantly positive environment towards ICT

Integration and cited the main challenge being the lack of structured teacher training and continuity which was consistent throughout all responses.

1. Digital Resources and ICT Tools Utilised

The data analysis indicates the use of ICT tools as being an active component in English Secondary Classrooms in Lakshadweep and that approximately 90% of Teachers regularly use Smart Boards, LCD Projectors, Laptops and Power Point presentations when delivering their lessons. The data also indicates that approximately 81% use Educational Videos and are most frequently used for Listening Comprehension and Contextual explanations of Literary Texts. Approximately 76% of respondents indicated that they utilise Digital dictionaries, Grammar websites and Online Reading materials. Only about 62% of Respondents indicated that they use Interactive Platforms to assign work and assess students, such as using Google Classroom or providing Quizzes Online. This indicates that ICT is well integrated within classrooms, but is only moderately integrated as an Interactive/ Collaborative Learning tool.

2. Sufficiency and Dependability of Technology Infrastructure

Most teachers (85%) were satisfied with the case of ICT resources available at their schools. The use of smart classrooms, as well as projection systems, either work and are available for use. Nearly 81% of teachers stated that the internet is reliable most of the time; there are only occasional problems with the distance from where they are trying to connect to the Internet and with access to the internet. A small number (15%) of teachers identified minor technical difficulties as the cause of any barriers to implementation of ICT in their schools. The lack of ICT resources was not raised as a major issue; therefore, it is evident that Lakshadweep secondary schools have a good supply of basic ICT resources.

3. Problems Encountered When Implementing ICT

When asked about operational problems associated with the use of ICT, there were few major technical problems reported by the teachers; however, 72% indicated that they were provided with only initial training when ICT resources were introduced into their schools. The teachers also stated that while they have encountered issues with the use of different software applications and higher-level technology, they did not perceive there to be any issues with using basic technology on a daily basis. Therefore, while there are some operational issues, they appear to be manageable.

4. Major Hurdles for Having a Successful Use of ICT

“The biggest barrier to effective implementation of ICT, as most of the teachers spoke about 89% 18-19 teachers, was the absence of proper systematic training and advanced professional development such as coaching opportunities, etc., that would allow them to innovate their use of ICT. While there is a considerable amount of physically available resources available to them as well as a generally positive attitude among them regarding the availability & effectiveness of ICT there was consensus that the shortage of hands-on experience

& practice as well as access to expert and skilled staff to support them is at the core of the problem rather than lack of resources or facility infrastructure.

5. Confidence and Preparedness of Teachers to Use of Technology

Approximately 83% of teachers stated that they were confident in their ability to use basic ICT tools such as presentations, videos, and digital displays; however, when it came to advanced ICT tools only 48% expressed feeling prepared to use collaborative tools, digital tools for assessment and AI based language tools regardless of whether they were “good” users; therefore, it appears evident that these teachers have an adequate understanding and use of ICT but will require training on how to integrate this technology into their pedagogy.

6. Student Response and Responsibilities:

From an overwhelming consensus, the teachers reported that the vast majority of their students were positively engaged, attentive, and participating in learning activities from technology-enhanced instruction; 95% of teachers reported that their students increased their level of participation in classes where technology was used. Approximately 88% of members stated that the use of multimedia enhanced student comprehension; this was especially true of the student’s ability to listen to and accurately pronounce words. In addition, 70% of the staff reported that students need to display digital discipline and commit to participating fully and consistently in ICT-enhanced learning experiences in order to receive maximum benefits.

7. The Impact of ICT On the Development of Language Skills

The vast majority of respondents (90%) stated that ICT provides real-world audio/visual input (i.e., exposure to authentic sounds and images) which greatly enhances student listening and speaking skills. In addition, 84% indicated that using digital text and online comprehension activities has improved their reading skills. Furthermore, three-quarters (76%) of the participants reported that they have improved their writing skills by using word processing software and grammar support software. Additionally, teachers stated that ICT has a compensatory effect on students who experience geographical isolation by providing access to real world examples of the use of the English language.

8. The Institutional Support Provided to Teachers for Integrating ICT Into Their Teaching

About 87% of the participants reported that their school management provided both support (in terms of providing infrastructure) and encouragement to teachers to use ICT as part of their teaching practice. However, 52% of participants indicated that structured professional development programs and/or school policies to ensure ongoing ICT training did not exist. This indicates that while administrative support is strong, teachers need to be provided with more systematic professional development.

9. How ICT Integration Affects Student Motivation And Learning Outcomes

Approximately 92% of teachers noted that I.C.T. integration into the lessons increased student motivation and participation in the classroom. Furthermore, 81% believe that ICT positively impacts learning outcomes (i.e.

vocabulary development, pronunciation accuracy and comprehension). Finally, 75% of respondents indicated that incorporating I.C.T. into English classes reduces boredom and makes the lessons more interactive and fun.

10. Extra Assistance/Experience Required

91% of teachers indicated that on-going, immersive and advanced ICT professional development was the most pressing need. While on-going PD was important, 78% believed that recurrent refresher PD sessions were necessary to stay up to-date with emerging technology and teaching methodologies. Only 9% of teachers requested additional hardware supplies, suggesting that IT infrastructure is probably satisfactory. The data supports the need for a concerted effort to improve systematic professional development to facilitate a richer and stronger integration of ICT into English instruction at the secondary level in Lakshadweep.

Conclusion:

Based on a qualitative study that included 21 English teachers from secondary schools in Lakshadweep, the use of ICT in English teaching at the secondary school level was studied. The results show that there is operational usage of ICT in these schools and that teachers perceive this positively. Typical examples of digital tools being used to assist teachers in delivering their lessons include smartboards, projectors, computers, multimedia, and online platforms. Teachers perceive that ICT increases the engagement of their students and helps them understand language concepts better, and helps develop their listening, speaking, reading, and writing skills.

Adequate support from the institutions, and the presence of the necessary technological infrastructure in the schools suggests that Lakshadweep secondary schools have made significant progress towards being technology-enabled. However, there is a major gap in systematic and continuous professional training for teachers in the area of utilizing ICT. The majority of educators are willing and relatively competent to use ICT tools; however, most educators do not possess advanced pedagogical skills or training to effectively integrate emerging technologies into language teaching. Consequently, most educators use ICT tools in presenting to students rather than using ICT tools to create interactive, student-centered, and skill-integrated language learning experiences.

The most significant opportunity to improve the use of ICT in Lakshadweep secondary schools is to create a structured and sustained capacity-building programme for teachers. In conclusion, the findings of this research show that although there is an established supportive environment for ICT implementation in Lakshadweep secondary schools (with adequate infrastructure and positive attitudes) the successful integration of technology into English language instruction depends heavily on improving teachers' preparation/skills. In order to maximize the educational use of digital technologies, it is necessary to have targeted, professional development programs that focus on the unique context of these islands. Closing this training gap will allow

Lakshadweep to improve the overall quality and sustainability of English language education through enhanced, purposeful and innovative approaches using digital technologies.

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