International Research Journal of Educational Psychology
e-ISSN: 2456-8198 | Vol.09 | No.01 | Jan-Jun 2025 | pp. 30-35

RESEARCH PAPER

Double-Blind Peer Reviewed/Refereed Journal

The Transformative Impact of Information and Communication Technology on Inclusive Education and the Empowerment of Diversity in Nagaland

*[1]Hiketo Wotsa and [2]Dr. Sushil Kumar Singh

[1]Research Scholar, Department of Teacher Education, Nagaland University Kohima Campus
[2]Associate Professor, Department of Teacher Education, Nagaland University, Kohima Campus Meriema, Nagaland, India

Abstract

This review paper explores the transformative impact of Information and Communication Technology (ICT) on inclusive education within Nagaland, a region known for its diverse cultural and linguistic milieu. Inclusive education ensures equal opportunities for all learners, including those from marginalized communities and with disabilities. Nagaland's unique blend of cultural diversity and geographical challenges makes it an intriguing case study examining ICT's role in bolstering educational inclusivity. Beginning with explaining inclusive education's importance in promoting diversity and equity, the paper navigates through Nagaland's specific hurdles, such as limited infrastructure and socio-economic gaps. It underscores ICT's potential as a tool for surmounting these barriers, showcasing examples from Nagaland that demonstrate successful ICT integration into inclusive educational practices. These instances illustrate ICT's ability to personalize learning, cater to diverse learning styles, and foster collaboration. Additionally, the paper explores ICT's broader impacts, including social empowerment, economic opportunities, and community development, highlighting the necessity of policy backing, infrastructure enhancement, and capacity building for effective ICT implementation. Ultimately, it stresses ICT's transformative capacity in advancing inclusive education within Nagaland and beyond, advocating for its strategic use to create equitable and enriching educational environments.

Keywords: *Inclusive Education, ICT, Equity, Empowerment and Diversity*

Article Publication

Published Online: 30-Jun-2025

***Author's Correspondence**

Hiketo Wotsa

Research Scholar, Department of Teacher Education, Nagaland University Kohima Campus

wotzhiketo@gmail.com

Introduction

Inclusive education is a comprehensive approach that considers the unique characteristics, interests, abilities, and learning needs of all children, youth, and adults, especially those vulnerable to marginalization and exclusion. It aims to provide access to standard preschool provisions, schools, and community educational settings with appropriate support services for all learners, regardless of disabilities. This approach creates an inclusive society, ensuring all students are included in learning (MHRD Draft Inclusive Education, 2003). NEP 2020 emphasizes instilling an inclusive educational structure and culture in our school education system through infrastructure support and curriculum changes that include materials on human values such as respect for all people, empathy, tolerance, human rights, gender equality, nonviolence, global citizenship, inclusion, and equity. It encourages stakeholders to overcome hurdles and eliminate prejudices and preconceptions through a sensitization campaign. The policy aims to promote inclusiveness, equity, and respect for diversity by fostering an understanding of diverse cultures, faiths, languages, and gender identities among students, teachers, and other teachers and administrators. The Nagaland Board of School Education (NBSE) has emphasized the importance of equity and inclusion in education, stating that all children, including those with special needs, deserve the right to education.

According to the 2011 national census, Nagaland has 29,631 people with disabilities in total. People in Nagaland need to be made aware of their rights and facilities, and there needs to be a significant gap between policy provisions and the actual application of laws. Only a few private and governmental institutions or non-profit organizations in urban areas provide special needs children with educational facilities. District-wise, the number of

schools with "Children With Special Needs" (CWSN) based on the UDISE+ 2023-24 report shows that there are 1667 CWSN students enrolled in Nagaland government schools.

objectives

1. The Issues and Challenges Nagaland Faces in Achieving Inclusive Education
2. Information and Communication Technology (ICT) as a Catalyst for Overcoming Barriers and Initiating Inclusive Educational Practices.
3. Promoting Personalized Learning Experiences, Accommodating Diverse Learning Styles, and Fostering Collaboration among Students and Educators
4. The Implications of Inclusive Education to Social Empowerment, Economic Opportunities, and Community Development
5. The Policy Support, Infrastructure Development, and Capacity Building for Effective Implementation
6. The Transformative Potential Paving the Way for A More Equitable and Empowering Educational Landscape

Methodology

The current research is a descriptive, macro-level, qualitative study that draws on secondary data from published records, reports, and contributions made by various persons, institutions, and organizations in Nagaland. The Annual Reports, books, journals, and websites are secondary sources. The present study could only be on ICT-based inclusive education in Nagaland education sectors since these secondary sources had glaring samples and dimensional study constraints.

The Major Reflections

1. The Issues and Challenges Nagaland Faces in Achieving Inclusive Education

Nagaland faces significant systemic and societal barriers in implementing inclusive education (IE) for Children with Special Needs (CWSN). One of the primary challenges is the **rigid curriculum and lack of trained educators**. Many teachers in the region lack certification and expertise in designing adaptable learning programs, resulting in inflexible teaching methods and evaluation techniques that fail to accommodate diverse learning needs (Wani, 2025). This rigidity forces CWSN into a one-size-fits-all system, limiting their academic and social development. Additionally, **peer rejection** exacerbates exclusion, as societal attitudes often stigmatize disabilities, preventing meaningful interaction between CWSN and their peers. Another critical barrier is **poverty**, which disproportionately affects households with CWSN. Many families earn below the national poverty line, creating a state of "immediate deprivation" where education becomes a secondary concern to survival. The intersection of poverty and disability further marginalizes CWSN, making regular school attendance nearly impossible without targeted financial and infrastructural support. **Negative self-perception among CWSN** and societal prejudice also hinder inclusion. Misconceptions persist among parents of non-disabled children, who often view disabilities as contagious or undesirable, reinforcing segregation. These biases are perpetuated by teachers, peers, and community members, leading to internalized stigma among CWSN. Without addressing these deep-rooted attitudes, inclusive education remains unattainable.

Finally, **family collaboration** plays a pivotal role. Many parents of CWSN hesitate to disclose their child's disability due to fear of discrimination, delaying necessary interventions. However, research indicates that supportive parental and teacher attitudes are crucial for fostering acceptance and inclusion over time. While Nagaland has recognized the need for IE in policy, translating this into practice requires systemic reforms including teacher training, poverty alleviation programs, and awareness campaigns to dismantle structural and attitudinal barriers (Ao, 2022).

2. ICT as a Catalyst for Overcoming Barriers and Initiatives on Inclusive Educational Practices:

Nagaland's inclusive education (IE) initiatives under Samagra Shiksha (2022–23) demonstrate a structured, multi-stakeholder approach to addressing the needs of Children with Special Needs (CWSN). The state has made

notable progress in diagnostic support, assistive device distribution, teacher training, and community sensitization. Annual assessment camps across 46 EBRCs in 11 districts identified 203 CWSN beneficiaries, leading to the distribution of 664 aids and appliances, including 278 hearing aids and 582 spectacles, through collaborations with TPORC Imphal, Soundbeatz Delhi, and NRRC Dimapur. Teacher capacity building was enhanced through specialized autism training for four IE Resource Persons in Delhi and cross-disability workshops on Universal Design for Learning (UDL). Community engagement improved via awareness programs in five colleges and stipends for 156 CWSN girls, while parent-teacher-NGO dialogues in Dimapur successfully mainstreamed blind students into government schools (Nagaland: Improving Learning Outcomes by Enabling Inclusive Education Workshop, 2023).

Despite these achievements, systemic gaps persist. Geographic disparities are evident, with Kiphire and Mon districts lacking Resource Persons (RPs), limiting support for CWSN in remote areas. Short-term interventions, such as aids distribution, lack long-term maintenance plans, risking sustainability. Teacher preparedness remains inconsistent, as general educators struggle to adapt pedagogy for diverse disabilities, and UDISE+ data reveals no curriculum modifications for individualized learning despite 2,251 CWSN enrollments (Inclusive Education - Samagra, 2024). Societal stigma and parental hesitation, fueled by misconceptions about disabilities, further hinder inclusion. Monitoring frameworks are inadequate, with UDISE+ omitting critical metrics like dropout rates and skill acquisition.

Key lessons highlight the need for decentralized IE resources, including permanent district IE cells and ICT tools like the PRASHAST app for real-time progress tracking. Teacher training reforms, such as mandatory pre-service IE modules and continuous upskilling via NISHTHA 4.0, are essential. Community-led awareness campaigns involving ASHA workers and NGOs can combat stigma, while holistic monitoring frameworks aligned with PGI-D should track CWSN-specific indicators. Nagaland's initiatives, though commendable, remain project-driven; bridging gaps requires sustained funding, community ownership, and policy reforms to align with NEP 2020's equity goals. Longitudinal studies are needed to assess the transformative impact of inclusion on CWSN empowerment (Wani, 2025).

3. Promoting Personalized Learning Experiences, Accommodating Diverse Learning Styles, and Fostering Collaboration among Students and Educators

One significant impact of ICT is its ability to promote personalized learning experiences. With the aid of adaptive learning software, intelligent tutoring systems, and learning management systems (LMS), students can receive customized content, pacing, and feedback based on their abilities and progress. For instance, platforms like Khan Academy and Coursera use algorithms to adapt learning pathways to individual learners' strengths and weaknesses (Cavanaugh, 2017). This personalization enhances engagement and facilitates a more profound understanding and mastery of concepts. Moreover, ICT accommodates diverse learning styles by offering a range of multimedia resources and interactive activities. Visual, auditory, and kinesthetic learners can all benefit from digital simulations, educational videos, audiobooks, and interactive games. For example, students with dyslexia may find text-to-speech software helpful, while those who prefer visual learning can utilize mind-mapping tools like MindMeister or graphic organizers. By catering to different learning modalities, ICT ensures all students have equal opportunities to access and comprehend educational content (Roblyer & Doering, 2017). Furthermore, ICT fosters collaboration among students and educators through various communication and collaboration tools. Virtual classrooms, discussion forums, and collaborative documents enable students to engage in peer learning, share ideas, and work together on projects regardless of geographical barriers (Barbour & Reeves, 2009).

4. The Implications of Inclusive Education to Social Empowerment, Economic Opportunities, and Community Development

ICT-enabled inclusive education extends its impact beyond classrooms, resonating with social empowerment, economic prospects, and communal progress. It democratizes access to education, transcending geographical, socio-economic, and physical barriers, thereby empowering marginalized groups worldwide. UNESCO (2019)

emphasizes that ICT ensures equal educational opportunities for all, including girls in remote areas and individuals with disabilities, crucial for personal and societal advancement. This empowerment encompasses academic gains and nurtures critical thinking, problem-solving, and digital literacy, enabling active civic participation and meaningful societal contributions. Moreover, ICT-driven inclusive education unlocks economic avenues by equipping learners with digital-age competencies essential for workforce integration. As technology reshapes industries, those with tailored education are better positioned for employment and adaptability, reducing educational disparities and enhancing employability and earning prospects (World Bank, 2018). Communal advancement is furthered as ICT fosters collaboration, innovation, and knowledge sharing, promoting social cohesion and resilient communities capable of addressing collective challenges (OECD, 2019). Inclusive education's emphasis on diversity and inclusion cultivates respect for varied perspectives and cultures, nurturing inclusive, cohesive communities ready to embrace a dynamic world's opportunities and trials.

5. The Policy Support, Infrastructure Development, and Capacity Building for Effective Implementation

Implementing ICT in inclusive education in India requires robust policy backing, infrastructure growth, and capacity-building efforts. Policy support is crucial to integrating ICT into inclusive education practices, covering curriculum development, teacher training, digital content creation, and accessibility standards (UNESCO, 2017). Collaborating with stakeholders like government agencies, educational institutions, civil society organizations, and technology providers is vital for comprehensive policy frameworks. Tailoring education to Nagaland's unique challenges, including cultural diversity, linguistic backgrounds, geographical hurdles, and socio-economic gaps, is essential. Training and supporting teachers with skills in managing student behavior, prioritizing well-being, and addressing non-academic factors are key. Inclusive education policies prioritize equal access, affordability, reduced disparities, and equitable opportunities (Rikha, 2023). Infrastructure development is crucial, including reliable electricity, internet access, hardware devices (computers, tablets, interactive whiteboards), and tailored software applications. Investment in rural and underserved areas helps bridge the digital divide and ensures all learners access necessary ICT tools (Saravanakumar & Moorthy, 2020). Establishing digital libraries, multimedia labs, and technology-enabled classrooms fosters immersive learning environments. Capacity-building initiatives are essential for teachers, administrators, and stakeholders to gain ICT skills for inclusive education through professional development programs enhancing digital literacy, ICT integration, inclusive teaching practices, and assistive technology usage (Mishra, 2018).

6. The Transformative Potential Paving the Way for a More Equitable and Empowering Educational Landscape

The transformative potential of Information and Communication Technology (ICT) in Nagaland's educational landscape lies in its ability to overcome geographical barriers and provide equitable opportunities for all learners, including marginalized communities such as indigenous populations and students with disabilities (Pulse, 2025). By leveraging digital platforms, ICT caters to diverse learning needs and preferences while fostering cultural pride and identity among learners, ensuring education is both inclusive and culturally relevant (Dutta & Niranjan, 2021). Additionally, ICT enhances teachers' professional development through online training programs, resource-sharing platforms, and collaborative networks, enabling educators to adopt innovative pedagogical approaches (Pulse, 2025). It also creates inclusive learning environments by integrating assistive technologies, multimedia resources, and interactive tools, ensuring accessibility for students with varying needs (InnovateEDU, 2025). Furthermore, ICT facilitates community engagement and parental involvement by providing communication platforms and opportunities for participation in educational decision-making processes (Dutta & Niranjan, 2021). Empowering marginalized groups, ICT opens doors to education, skills training, and employment opportunities in the digital economy, bridging socioeconomic gaps (Vizo et al., 2020). Lastly, it connects learners with global resources, experts, and cross-cultural educational experiences, equipping them with the competencies needed to thrive in the 21st-century workforce (Pulse, 2025). These advancements underscore ICT's role in fostering an equitable, empowering, and globally connected educational ecosystem in Nagaland.

Conclusion

Nagaland's path toward inclusive education is both challenging and hopeful. Many children with special needs still face obstacles, such as outdated teaching methods, a lack of trained teachers, and lingering social stigma. Yet, the growing use of Information and Communication Technology (ICT) is making a real difference. With tools that support personalized learning and better communication, ICT is helping students with diverse needs feel more included and empowered. The state's efforts—like teacher training, early diagnosis, and involving local communities—are important steps forward, though there is still work to be done, especially in ensuring resources reach every corner of Nagaland. By embracing these changes and continuing to invest in people and infrastructure, Nagaland can build an education system where every child has the chance to succeed. Ultimately, creating a truly inclusive environment will depend on the commitment and collaboration of educators, families, and the wider community.

References

[1] Ao, I. (2022). Issues and challenges of inclusive education in Nagaland. *International Journal of Novel Research and Development; International Peer Reviewed & Refereed Journals, Open Access Journal*, *Issue* 10), 245–249. https://doi.org/http://doi.one /10.1 729/Journal.31796

[2] Barbour, M. K., & Reeves, T. C. (2009). The reality of virtual schools: A review of the literature. Computers & Education, 52(2), 402-416.

[3] Cavanaugh, C. (2017). Personalized learning: The importance of flexibility in learning and teaching. International Journal on E-Learning, 16(1), 5-14.

[4] Dutta, R., & Niranjan, P. (2021, April 13). *BREAKING BARRIERS, BUILDING BRIDGES: Nagaland's ICT and e-Governance Transformative impact*. MorungExpress. Retrieved June 13, 2025, from https://www.morungexpress.com/breaking-barriers-building-bridgesnagalands-ict-and-e-governance-transformative-impact

[5] Government of India. (2020). Inclusive education [PDF file]. Retrieved from https://www.education.gov.in/shikshakparv/docs/Inclusive_Education.pdf

[6] InnovateEDU. (2025, April 9). *Educating All Learners Alliance opens 2025 new Champions fund to support leaders of color and allies who support students with disabilities*. PRNewswire-PRWeb. Retrieved June 13, 2025, from https://www.prweb.com/releases/educating-all-learners-alliance-opens-2025-new-champions-fund-to-support-leaders-of-color-and-allies-who-support-students-with-disabilities-302423028.html

[7] Khrozhoh, L. (2023, May 27). *Inclusive education still a dream in Nagaland - Eastern Mirror*. Eastern Mirror. https://easternmirrornagaland.com/inclusive-education-still-a-dream-in-nagaland/#google_vignette

[8] Ministry of Human Resources Development (MHRD). Annual Report 2002-2003. New Delhi: GOI.

[9] Mishra, S. (2018). Role of ICT in teacher education. International Journal of Engineering and Management Research, 8(3), 80-84.

[10] *NAGALAND: 'All schools should focus on a more inclusive education system.'* (2024). MorungExpress. https://morungexpress.com/nagaland-all-schools-should-focus-on-a-more-inclusive-education-system

[11] Neogi, S. (2024, July 22). *NEP 2020 and Skill Development: Encouraging 21st-century skills in students*. LearnQoch. https://learnqoch.com/nep-2020-and-skill-development-encouraging-21st-century-skills-in-students/

[12] OECD. (2019). Equity in education: Breaking down barriers to social mobility. OECD Publishing.

[13] Pulse, N. (2025, April 8). Transforming Education in Nagaland through science and technology integration. *Nagaland Pulse*. https://nagalandpulse.com/transforming-education-in-nagaland-through-science-and-technology-integration/

[14] Rikha, K. (2023, June 22). *Nurturing inclusivity: What ails the education system in Nagaland?* EastMojo. https://www.eastmojo.com/nagaland/2023/06/23/nurturing-inclusivity-what-ails-the-education-system-in-nagaland/?Y29uc3VtcHRpb24=0d0ce60a-5287-4173-b3ae-eb657e95f685

[15] Roblyer, M. D., & Doering, A. H. (2017). Integrating educational technology into teaching. Pearson.

[16] *Inclusive Education - samagra*. (2024, November 4). Samagra. Retrieved June 12, 2025, from https://samagra.nagaland.gov.in/inclusive-education/

[17] Saravanakumar, V., & Moorthy, R. M. (2020). A review on ICT infrastructure development in Indian educational sector. Materials Today: Proceedings, 21, 1687-1692.

[18] The Naga Republic. (2022, July 27). *Nagaland: Towards implementing a strong, inclusive education program*. NAGA REPUBLIC. http://www.thenagarepublic.com/news/nagaland-news/nagaland-towards-implementing-a-strong-inclusive-education-program/

[19] UNESCO. (2017). Policy guidelines for mobile learning. UNESCO.

[20] UNESCO. (2019). Education for people and planet: Creating sustainable futures for all. UNESCO.

[21] Vizo, K. D., Mall, M., Rout, R., & Parida, P. (2020). Evaluation of ICT opportunities from student's perspective in the state of Nagaland, India. *Cogent Business & Management*, *7*(1), 1842009. https://doi.org/10.1080/23311975.2020.1842009

[22] World Bank. (2018). World development report 2018: Learning to realize education's promise. World Bank.

[23] Wani, F. (2025, May 17). *What ails education system in Nagaland*. Brighter Kashmir. Retrieved June 12, 2025, from https://brighterkashmir.com/news/what-ails-education-system-in-nagaland