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BLENDED LEARNING: A STRATEGIC APPROACH TO BRIDGE THE DIGITAL DIVIDE

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ABSTRACT

Incorporating digital technology in education has profoundly altered learning methodologies, resulting in the emergence of blended learning— the synthesis of online and in-person instruction. The proliferation of ICT infrastructure has enabled flexible, high-quality learning experiences, promoting educational inclusivity. The digital divide obstructs equitable access to education, especially in underserved and marginalized communities. Rural and socioeconomically disadvantaged communities face challenges in adopting digital learning due to insufficient internet connectivity and limited resources. Blended learning is a strategic method to address these disparities by combining digital and physical learning environments. The present research examines the capacity of blended learning to alleviate digital disparities through the utilization of flexible delivery methods, technological progress, and pedagogical innovations. While blended learning presents a viable solution to the digital divide, continued research and strategic investments are necessary to ensure long-term educational equity and effectiveness.

Keywords: Blended Learning, Digital Divide

1. INTRODUCTION

The advent of new technologies in educational settings has started to change our perceptions of technology. The proliferation of ICT infrastructure, tools, and gadgets such as reliable internet connections, mobile phones, and laptop computers has enabled the online delivery of educational information, allowing for high-quality learning with flexible access to outstanding education (Dubey, 2021). Technological innovation has undergone progressive evolution, offering innovative solutions for learning as well as teaching. The introduction of digital technology in education has led to the emergence of the term 'Blended Learning' as a method of knowledge distribution. This novel learning method may include both distance and duration. It enables individualized learning by providing learners with total control over their advancement through the content (Bryan & Volchenkova, 2016). On 28 July, India's Union Cabinet approved National Education Policy 2020, aimed at universalizing education from pre-primary to secondary levels. This method seeks to establish an inclusive framework for making education in the country more accessible, equitable, and complete. It also underscores the significance of addressing social inequities in educational access, engagement, and learning outcomes (Sahoo, 2020). The National Education Policy 2020 includes various proposals for improving public access to online education. The strategy proposes the creation of a National Educational Technology Forum (NETF), an autonomous entity designed to facilitate the open exchange of ideas and the application of technology to enhance learning,

assessment, planning, and administration. The policy has rigorously recorded substantial progress toward establishing a comprehensive blended education system across the country. The government of India has addressed the digital divide by allocating 6% of its GDP to public education, primarily for digital outreach and connectivity nationwide, representing an unparalleled initiative (Chowdhury 2021).

This study will thus contribute to understanding how blended learning has become a preferred method for bridging the digital divide in the educational landscape. The study will, therefore, address the digital gap that exists due to a lack of digital facilities in the academic sector.

2. EMERGENCE OF BLENDED LEARNING

The term "blended learning" is typically associated with the integration of traditional classrooms and e-learning activities. Over time, the word grew to encompass a far larger spectrum of learning strategies. Blended learning integrates offline and online modalities, with online learning generally referring to instruction conducted via the Internet or an intranet. Conversely, offline learning transpires in traditional classroom settings. The initial generation of e-learning or web-based educational programs predominantly comprised traditional classroom instructional materials delivered through the Internet. They are redundant or comprise online iterations of traditional classroom courses. In the second generation, specific learning designers investigated blended learning models by integrating various delivery methods, demonstrating that blended learning provides not only additional options but also proves highly beneficial for education (Singh, 2004).

The University Grants Commission proposed the concept of blended learning on 20 May 2021 to enhance students' learning abilities and increase access to quality education (Dubey, 2021). It is unequivocally a learner-centric concept that asserts students as the primary stakeholders, necessitating that educators establish an environment that aligns with learners' desires and objectives. NEP emphasizes the significance of multi-modal learning strategies, including in-person, online, distance, and digital formats, as well as multidisciplinary, vocational, value-added, and skill-development programs (Tiwari, 2021).

3. BLENDED LEARNING

Blended learning refers to an educational approach that integrates conventional classroom instruction with online learning or activities. Cooney et al. (2000) executed a pioneering study on blended learning, introducing the term "Blended Learning" to characterize the integration of play with work in prekindergarten education, thereby allowing students to engage in diverse activities.

Stewart (2002) advocates for blended learning, which integrates self-paced, asynchronous work-based education with synchronous, instructor-led training in intercultural environments. Conversely, Graham and Osguthorpe (2003) define blended learning as a synthesis of in-person and remote delivery methods; however, it transcends merely projecting a webpage on a classroom screen. Participants in blended learning environments strive to maximize the advantages of both online as well as in-person methodologies.

Singh (2004) classified blended learning into dimensions, encompassing online and offline learning, self-paced and collaborative learning, unstructured and structured learning, proprietary and off-the-shelf content, along with learning, performance, and practice support. He observed that corporations would prioritize blended learning programs over single-delivery mode programs as technology advances. Blended Learning is a method for customizing education as well as development to meet individual requirements through innovative technological advancements in conventional learning. (Dalal, 2013)

In their 2004 article on blended learning, Garrison and Kanuka assert that it entails the deliberate integration of online learning activities with in-person classroom experiences.

4. DIGITAL DIVIDE

The digital divide denotes disparity among demographics and regions utilizing contemporary communication and information technologies and those lacking such access, encompassing variations in both the affordability and reliability of internet services. In numerous countries, rural populations are more prone to being disconnected from contemporary

technology than urban residents. In 2019, a gender disparity was evident, with 55 percent of the global male population having Internet access, in contrast to merely 48 percent of the female population (Taylor, 2022). The trust for technology-driven education presents numerous challenges, including the accessibility of tablets, laptops, and smartphones, the availability of digital technology, the reliability of electricity supply, and, crucially, the proficiency of educators in utilizing and implementing technology for instruction (Ramagoud, 2021).

The digital divide manifests in three primary dimensions: (1) access to technology, (2) digital literacy, and (3) effective utilization of digital tools (Selwyn, 2021). Socioeconomic differences, physical location, and infrastructural constraints all contribute to uneven access, which disproportionately affects pupils in rural and low-income regions. A mixed learning paradigm can reduce these discrepancies by offering offline and asynchronous resources alongside online information, assuring inclusion (Means et al., 2014).

Anuradha Gupta claims that a considerable proportion of students do not have the ability to use electronic devices, the Internet, and television. Consequently, an intensive academic mentoring campaign is deemed necessary to support each child effectively. No one surpasses the teachers in their capabilities (Manhotra 2020).

5. EFFECTIVE ROLE OF BLENDED LEARNING IN BRIDGING DIGITAL DIVIDE

The alarming increase in COVID-19 cases in 2020 has enabled individuals to become digitally literate and familiar with digital learning platforms while also facilitating online education that enhances teacher and student engagement in the learning process. (Dubey, 2021).

In this context, Prof. Nimma Ventaka Rao, Former Dean and Faculty of Education at Andhra University, discussed the ideas, regulations, benefits, and problems of online learning based on his study. Prof Rao told the Times of India that the majority of parents believe their children are missing out on the typical classroom structure, which involves interactions with peers and teachers. Despite the pandemic, many people continue to choose homeschooling over online learning. However, defining 2020-21 as a 'zero academic year' risks disengagement from the learning process. At this stage, a mixed-learning method can achieve the aim by integrating experience with experimental learning (Rao, 2020).

With increasing reliance on digital tools for learning, students in resource-constrained environments face barriers to educational opportunities. Blended learning offers a solution by integrating conventional in-person instruction with online education, thus addressing varied technological capabilities and learner requirements (Graham, 2019). Blended learning, which effectively combines in-person instruction with technology-enhanced learning experiences, presents a viable solution to bridge this gap, potentially expanding access to quality education irrespective of geographical limitations or socio-economic conditions (Hashim & Hamidon, 2022). As a result, blended learning looks to be a strategy for filling any gaps that may arise during these uncertain times. It's an educational approach that combines conventional in-person instruction with digital activities. The system's strengths include the ability to integrate in-person as well as online teaching methods into a unified educational framework (Veeraraghav, 2021).

Effective execution of blended learning requires a comprehensive understanding of the intricate aspects of the digital divide, encompassing technology access, digital literacy, infrastructure, and appropriate pedagogical strategies. Bridging the digital divide necessitates a comprehensive approach that accounts for the intricate relationship among technological infrastructure, digital literacy, and socioeconomic factors. The lack of dependable internet connectivity and adequate equipment remains a significant barrier, particularly in rural and underdeveloped areas. Chowdhury (2021) also stated that the transition to a blended or hybrid method of education would reduce the burden of travel expenses on families while simultaneously keeping pupils away from school for health and safety reasons. When students adopt this mode, it allows them to continue their studies both online and physically on certain days. Blended learning has the capacity to substantially bridge the digital divide. Blended learning will facilitate access to learning tools and study materials, which will be provided in advance to promote self-directed learning.

6. MAIN FINDINGS

1) Blended Learning as a Key Strategy

- Blended learning merges online as well as in-person instruction, enhancing the flexibility and accessibility of education.
- It provides a structured way to address learning disruptions while maintaining student involvement.

2) **The Role of Technology in Education**
   - Expansion of ICT tools as well as digital infrastructure has revolutionized educational delivery, enhancing inclusivity (Dubey, 2021).
   - The Indian government has committed 6% of GDP to digital education, highlighting the importance of bridging the digital divide (Chowdhury, 2021).
3) **Challenges of the Digital Divide**
   - The digital divide manifests in three principal dimensions: access to technology, digital literacy, as well as proficient utilization of digital tools (Selwyn, 2021).
   - Effective implementation of digital learning is significantly influenced by socioeconomic disparities, infrastructural deficiencies, and teacher readiness.
4) **Impact of COVID-19**
   - The pandemic accelerated digital learning adoption, making students and teachers more familiar with online platforms (Dubey, 2021).
   - However, concerns about missing traditional classroom interactions persist, requiring a balanced approach through blended learning (Rao, 2020).
5) **Government Policies and Initiatives**
   - National Education Policy (NEP) 2020 seeks to universalize education and minimize social inequities (Sahoo, 2020).
   - The establishment of the National NETF promotes the use of technology for education and policy discussions.

7. RECOMMENDATIONS

1) **Investment in Digital Infrastructure**: Governments and stakeholders should expand broadband access and provide affordable digital devices to underserved communities.
2) **Teacher Training and Digital Literacy Programs**:
   - Educators should receive continuous training on integrating technology into teaching methodologies.
   - Digital literacy initiatives must be implemented to provide students and educators with essential skills.
3) **Hybrid Learning Environments**
   - Schools should establish community-based digital hubs to support students with limited home connectivity.
   - Offline learning materials should complement online instruction to ensure inclusivity.
4) **Policy Implementation and Sustainable Funding**
   - Governments must ensure long-term funding for digital learning initiatives.
   - Educational policies should incorporate blended learning models to enhance accessibility and equity.
5) **Personalized Learning Approaches**
   - Learning programs should be tailored to individual student needs using blended learning techniques.
   - A mix of synchronous (live classes) and asynchronous (pre-recorded lessons) learning can improve engagement and outcomes

8. CONCLUSION

Blended learning serves as a strategic intervention for mitigating the digital divide by offering flexible, inclusive, and technology-enhanced education. While challenges exist, targeted investments in infrastructure, teacher training, and policy development can maximize its potential. Future research should examine the enduring effects of blended learning on educational equity and student achievement. The proliferation of blended learning can alleviate the digital divide within the nation.

CONFLICT OF INTERESTS

None.

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