



Research Article

Digital Learning and Sustainable Development Goal 4: A Case Study of Delhi Public School, Patiala

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Abstract

In the digital age, technology-based learning is essential to realising Sustainable Development Goal 4 (SDG 4), which emphasises inclusive and equitable quality education for all. This study investigates the factors impacting the use of digital learning approaches at Delhi Public School in Patiala. Teachers were interviewed as part of a case study method to gather information about their experiences using digital platforms. The results show that although teachers are aware of the difficulties and constraints associated with digital learning, they are also aware of its benefits for improving student engagement and learning outcomes. To increase accessibility and interaction, teachers use tools like Google Classroom, Google Meet, PowerPoint presentations, and multimedia content. This reflects the growing significance of digital education in achieving SDG 4.

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1. INTRODUCTION

The process of satisfying current wants without jeopardising the capacity of future generations to satisfy their own needs is known as sustainable development. It highlights a well-rounded strategy that incorporates social inclusion, economic expansion, and environmental preservation. With the publication of the Brundtland Report in 1987, the idea acquired international recognition and subsequently served as the basis for the United Nations' 2030 Agenda for Sustainable Development.¹ Long-term environmental care, equitable opportunity, and responsible resource use are all encouraged by sustainable development. It acknowledges the connections between ecological health, economic prosperity, and human well-being. Global collaboration, creativity, and laws that promote equitable advancement while preserving natural systems for future generations are necessary to achieve sustainable development.

The fourth Sustainable Development Goal (SDG) is to guarantee accessible, egalitarian, high-quality education and to encourage opportunities for lifelong learning for all. This goal, which was adopted by the UN in 2015 as part of the 2030 Agenda for Sustainable Development, acknowledges education as a key factor in both societal advancement and personal empowerment. SDG 4 places a strong emphasis on ensuring that all students, regardless of gender, socioeconomic status, or location, have equal access to high-quality education at all levels, including early childhood, primary, secondary, and further education. Additionally, it emphasises the significance of competent educators, secure learning settings, and pertinent skills for work and global citizenship. In order to create resilient and future-ready educational systems globally, SDG 4 calls for the integration of innovation, technology, and inclusivity.

Sustainable Development Goal 4 (SDG 4) of the United Nations Agenda 2030 emphasises the need to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all." Education is one of the most potent tools for social and economic transformation². Rapid technological development has drastically changed the educational scene in recent years. With its adaptable, accessible, and learner-centred methods that cut across socioeconomic and geographic boundaries, digital education has become an essential part of contemporary education.

Following the COVID-19 epidemic, which hastened the global transition from traditional classroom instruction to online and blended learning approaches, the incorporation of digital technologies into education has become particularly important. The potential of digital platforms to assist high-quality education is becoming more widely acknowledged by schools, educators, and legislators. But there are drawbacks to this shift as well, like instructors' low levels of digital literacy, gaps in infrastructure, unequal access to technology, and the requirement for successful pedagogical adaptation.

In this regard, the current study investigates the institutional implementation of digital learning at Delhi Public School in Patiala. The study looks into the viewpoints of educators, the platforms and technologies they use, and the elements that help

or impede successful digital learning. The paper seeks to advance knowledge of how Indian schools are implementing digital education in line with SDG 4 goals by examining experiences from this case study. In the end, this study highlights that although digital learning presents fresh chances to enhance educational quality and accessibility, its effective execution requires ongoing teacher preparation, infrastructure support, and the creation of inclusive digital tactics that close the current digital divide.

Methods

A case study approach was taken in this study, which was carried out at Delhi Public School, Patiala. An extensive procedure of one-on-one interviews was used to obtain data (Guion, Diehl, and McDonald 2011)³. Five educators who were deemed capable of implementing digital learning successfully in terms of fostering a positive learning environment and raising student accomplishment made up the study's participants.

The steps completed by Creswell (2017)⁴ are referred to as the method carried out. The first step involves problem identification, literature evaluation, technique selection, interview guide compilation, and participant selection. Interviews are the primary method of data collection in the second stage. The procedure of data analysis and conclusion is the last phase. Qualitative presentations are used to convey all data analysis outcomes.

2. RESULTS AND DISCUSSION

Result

Several data are categorised by the research theme, which includes the platform utilised, strategies to engage students, weaknesses of digital learning, and advantages of digital learning, based on the findings of an analysis conducted by five resource persons regarding the use of digital learning by teachers, as follows:

Advantages of Digital Learning

Benefits of Online Education Despite its difficulties, digital learning has a number of benefits that help achieve Sustainable Development Goal 4 by encouraging inclusive and high-quality education. Compared to traditional techniques, teachers at Delhi Public School in Patiala said that digital education offers more flexibility in lesson planning and classroom administration. It enables teachers to improve student engagement and comprehension by utilising cutting-edge resources like interactive movies, multimedia presentations, and online platforms. Additionally, teachers may more effectively manage their time and modify educational materials to meet a variety of learning needs thanks to digital learning. Teachers are better able to create dynamic, student-centred learning environments that promote creativity, engagement, and ongoing improvement in educational outcomes when they include technology in the teaching process.

¹ <https://sdgs.un.org/goals>

² <https://www.un.org/en/>

³ (Lisa A. Guion, 2011)

⁴ (Creswell, 2017)

Weaknesses of Digital Learning

Digital Learning's Drawbacks Although digital learning helps achieve Sustainable Development Goal 4, Patiala identified a number of difficulties with its implementation at Delhi Public School. Instructors noted that a large number of students had trouble adjusting to online learning environments, frequently perceiving the process as complicated and devoid of useful solutions. Developmental delays, a lack of conceptual comprehension, and trouble keeping up with technology improvements were common problems. Teachers also saw behavioural issues such as diminished reading habits, poor self-discipline, low interest, and learning loss. These drawbacks show that, despite its benefits, digital education needs better teacher preparation, increased digital literacy, and supportive tactics to guarantee efficacy and inclusivity. In the digital age, attaining fair and excellent education requires addressing these flaws.

Health Impacts of Digital Learning

Several health-related issues have also been brought up by students' and teachers' growing reliance on digital platforms in the classroom. Often known as "digital eye fatigue," prolonged screen time can cause headaches, impaired vision, and eye strain. Back pain, bad posture, and decreased physical fitness are all consequences of prolonged sitting and inactivity. Additionally, prolonged screen usage weakens attention spans, increases irritation, and decreases patience, all of which have an impact on pupils' mental health. Instructors at Delhi Public School in Patiala have also noticed that when taking classes online, kids tend to become less engaged and more distracted. In order to guarantee safe and sustainable learning in the digital era, it is crucial to promote digital health awareness and balanced screen usage.

Socio-Economic Challenges of Digital Learning

The financial strain that digital schooling takes on families with lower incomes is one of its main drawbacks. Participating in online education now requires having access to laptops, cellphones, and reliable internet connections. Teachers at Delhi Public School in Patiala saw that not all pupils could afford high-speed internet or appropriate gadgets, which had an impact on their performance and consistency in digital lessons. Inequality among students is exacerbated by the expense of maintaining devices, frequent data recharges, and restricted access to digital infrastructure. These difficulties draw attention to the widening digital gap, which disadvantages students from low-income families. Therefore, achieving the inclusion envisioned in Sustainable Development Goal 4 requires ensuring fair access to cheap technology.

Strategies for Activating Students

Techniques for Getting Students Involved: Teachers must use a variety of tactics that actively engage students and maintain their motivation in order to solve the difficulties associated with digital learning. Effective teaching in the digital age necessitates knowledge of technology developments and innovative use of various media platforms to improve communication and comprehension. Teachers at Delhi Public

School in Patiala stressed the value of efficiently planning classes, keeping track of students' progress, and implementing interactive activities. Quizzes, reward-based tasks, and project-based learning were found to be effective strategies for sustaining interest and encouraging success. Teachers may construct dynamic digital classrooms that promote student participation, critical thinking, and ongoing learning by fusing creativity, structure, and motivation.

The Platforms Used

Modern learning environments are built on digital platforms, which are essential to the successful implementation of digital education. Teachers at Delhi Public School in Patiala use a variety of platforms to improve learning results, teamwork, and communication. Google Classroom, which facilitates the sharing of resources and tasks, Google Meet, which facilitates virtual classrooms, and WhatsApp groups, which facilitate rapid communication and coordination, are often utilised technologies. To make courses more participatory and visually appealing, teachers also incorporate imaginative films and PowerPoint presentations. In addition to facilitating flexible and accessible learning, these platforms assist educators in implementing creative strategies that promote the objectives of inclusive and high-quality education in the digital era.

3. DISCUSSION

The results of this study show how schools are successfully implementing digital techniques to improve the teaching-learning process, supporting the methods used by instructors at Delhi Public School in Patiala. Rapid technology innovation and the COVID-19 pandemic's effects have expedited the transition from traditional classroom instruction to digital learning, changing the educational landscape overall (Purnasari & Sadewo, 2021).

To support learning, the school's teachers actively employ tools like Google Classroom, Google Meet, PowerPoint presentations, creative films, and WhatsApp groups. They are able to design adaptable, interactive, and student-centred settings thanks to these tools. This finding is consistent with Zain, Sayekti, and Eryani (2021), who stress that in order to provide successful instruction, teachers must become proficient in the use of digital technology. Teachers still have difficulties in spite of these developments, especially when it comes to figuring out effective digital teaching strategies and making sure that pupils adjust to and completely understand digital content.

The study emphasises the necessity of structured training programs and ongoing professional development to enhance instructors' ability to create and use digital learning resources. Additionally, the flexibility provided by digital platforms enables educators to use innovative strategies to improve knowledge and engagement, including teacher-made instructional videos. Salsabila et al. (2020) point out that using a variety of educational technologies is crucial to improving the educational process. Overall, the conversation emphasises that even while digital learning has many advantages, continuing assistance and training are essential to overcoming its drawbacks and guaranteeing long-term, excellent education.

4. CONCLUSION

Learning in the digital age has transformed education, requiring continuous adaptation to technological advancements. However, the findings from Delhi Public School, Patiala, reveal that several barriers still prevent teachers from fully utilising digital learning methods. Some educators struggle to understand and apply modern digital strategies, leading to difficulties in student comprehension and engagement. Despite these challenges, teachers recognise the advantages of digital learning, including the flexibility and creativity it offers through various media platforms such as Google Classroom, Meet, and interactive videos. By adopting diverse teaching strategies and continuously enhancing their digital skills, educators can overcome existing limitations and ensure that the learning process remains effective, inclusive, and aligned with the vision of Sustainable Development Goal 4.

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