

A STUDY ON BENGALURU'S ONLINE TEACHING PRACTICES

Antony D¹, Yogeshver Prasad Sharma²

¹Research Scholar, School of Education, Shri Venkateshwara University, Gajraula, Uttar Pradesh, India

²Professor & Dean, School of Education, Shri Venkateshwara University, Gajraula, Uttar Pradesh, India

shanojvd@gmail.com, yogeshverprasad@gmail.com

Corresponding Mail Id : shanojvd@gmail.com

ABSTRACT:

Bengaluru, the technological capital of India, has seen a dramatic shift in its educational scene with the rise of online education in the last few years. The purpose of this study is to provide a thorough evaluation of Bengaluru's online teaching methods by looking at the problems that have been encountered, the solutions that have been implemented, and the ways that things could be improved in the future. This research delves into the dynamics of online teaching in Bengaluru and its ramifications for the greater educational environment. It draws upon literature studies, interviews with educators, and analysis of educational platforms.

KEYWORDS: Online teaching, Bengaluru, Digital divide, Accessibility, Technological infrastructure.

I. INTRODUCTION

In the aftermath of the COVID-19 epidemic, online instruction has become more important in the global educational system. Online education has undergone a quick and revolutionary shift in Bengaluru, India's digital capital and a center of educational institutions. This introductory section provides context for the rest of the study by outlining the relevance, difficulties, and consequences of online teaching techniques in Bengaluru's educational environment. Bengaluru is home to several prominent educational institutions, including schools, colleges, and universities, and it also has a thriving information technology sector. The city's status as a national hub for innovation and technology has brought in students from all over the nation and encouraged widespread use of technology in many walks of life, including classroom instruction. There was an immediate transition to online learning environments after the global school closures caused by the COVID-19 epidemic in early 2020. Because of Bengaluru's strong IT infrastructure and heavy dependence on technology, this transformation was especially noteworthy there. As they navigated the challenges of remote teaching, educational institutions had to swiftly adjust to maintain learning continuity [1].

There were some bumps on the road to online education in Bengaluru. The digital divide, which widens pupils' already existent gaps in computer and internet access, was a major cause for worry. Limited internet bandwidth, a lack of gadgets, and basic digital literacy skills were some of the obstacles that some students encountered, while others had access to personal devices and high-speed internet. Educators and lawmakers alike made closing this achievement gap a top priority, and creative approaches were required to guarantee that all students could benefit from online learning opportunities. Another major obstacle to online education's widespread adoption is the state of the necessary technological infrastructure. Bandwidth limitations, server breakdowns, and software compatibility concerns were major challenges for Bengaluru educators, despite the city's strong IT infrastructure. In addition, many current systems were overloaded by the unexpected spike in demand for online platforms, demonstrating the need for strong infrastructure and scalable solutions to accommodate the increasing demand for online education. The shift to online instruction also required significant pedagogical adjustments. In order to adapt their teaching methods and instructional tactics to the online world, educators have to reconsider these things. The utilization of collaborative platforms, interactive tools, and multimedia materials became essential when traditional classroom-based techniques could no longer engage students successfully. Teachers also had to think about things like students' attention spans, screen weariness, and the absence of face-to-face connection while they were making plans for online lessons [2].

Additional difficulties in the online classroom environment were related to assessment and evaluation. For the digital world, old forms of assessment like written tests and in-person evaluations have to be rethought. Problems with online assessment validity, cheating, and open-book tests necessitated creative solutions including proctoring software, open-book exams, and project-based assessments to guarantee academic honesty and equity. Even with all these obstacles, the shift to online education in Bengaluru sparked a burst of creativity and new ideas. Immersive learning experiences were created by educators and institutions via the use of new technologies and teaching approaches. Tools like gamification, virtual reality, and augmented reality were utilized. As a versatile and adaptable method of instruction that can meet the needs of students with a wide range of learning preferences and styles, blended learning models have been gaining popularity. Another important development in online education is personalized learning, which gives teachers more control over their students' education by responding to their unique interests and requirements. Teachers were able to monitor their students' development, pinpoint their areas of weakness, and implement specific interventions to improve their learning outcomes with the use of data-driven analytics, intelligent tutoring systems, and adaptive learning platforms [3].

II. REVIEW OF LITERATURE

Thomas, Sanoop et al., (2023). Finding out how well Bangalore's educational system held up throughout the COVID-19 outbreak was the driving force for this research. The Indian education



system has lately implemented a change to accommodate the present pandemic situation: the delivery of lessons via online media. As a result, this study details the perspectives and worries of faculty and students at colleges and universities on the newly mandated online courses that have emerged from the COVID-19 pandemic. Faculty and students from Bangalore city's educational institutions make up the study's sample. The data was collected using an online survey approach. The results reveal that in order for online classes to be satisfactory for both teachers and students, certain factors must be in place. These factors include accessible technical support, well-organized online class modules, modifications to allow for the conduct of practical classes, and quality and timely interaction between students and professors [4].

Nanaware, Rajkumar & Sharma, Neha. (2021) Every part of our cosmos is changing shape, from the material to the immaterial, like a ball of wax. A shift occurs in people's outlook as well. You can tell a person by their attitude as well as their conduct, actions, and unique perspective on things. When it comes to any given person, object, or event, every single human being has an opinion. In a similar vein, educators might have varying opinions about every given term. The optimal transition from conventional classroom instruction to cutting-edge ICT-based instruction is one of the most noticeable transformations in the teaching-learning process. The adoption of vivid, new ideas is crucial for successful teaching, enjoyable learning, and the attainment of goals. In order to create teachers who are competent, skilled, efficient, and adept, teacher education schools employ these approaches to educate their students. Several examples of creative techniques include mobile learning, flipped learning, blended learning, tailored learning, team teaching, role play, and much more. However, putting these novel concepts into action is not without its challenges. Overcoming these challenges and staying up-to-date with the latest innovations in education is very essential [5].

Saxena and Sharma (2021). The whole world is reeling from the COVID-19 outbreak, and some nations have declared a state of emergency. During the lockdown phase caused by the COVID-19 pandemic, education providers in higher academic institutions have moved towards online instruction. Because their students could study from the comfort of their own homes, educators rethought their pedagogical approaches. Most educators are now at ease with using online portals to educate pupils and are actively seeking to incorporate new electronic teaching methods. During this new circumstance, there is a significant increase in interest among the teaching community. Students are given greater agency over their own learning and given access to a variety of learning tools via the blended learning model's virtual approach. This was a watershed moment when educational institutions needed instruction in online pedagogy from pioneers in the field of information and communication technology. Teachers are using a variety of digital platforms to facilitate online discussion, provide course materials, and grade students' work as part of a more adaptable approach to education. Therefore, instructors now face both possibilities and problems as a result of the current digital revolution in higher education. In light of the current transition from on-campus to online learning, this research aims to shed light on the advantages and disadvantages of online education for teachers [6].

Ahlawat, Bhavna. (2020) With this research, we hoped to better understand how the COVID-19 pandemic has affected Indian schoolchildren and teachers. The goals of this research were to(1) compare the condition in India's educational system before and after the spread of the COVID-19 virus, and(2) analyze the effects of the virus on students' academic performance. Data was collected using a Google Forms questionnaire type. The data was examined using the chi-square statistical technique at a 5% level of significance, and frequency tables and percentages were given as a result of employing primary data sources. In all, 355 undergraduate and graduate students from various Indian universities participated as responses. The results of the investigation showed that the COVID-19 epidemic had a major effect on the Indian educational system [7].

Bharathi, M. et al., (2020) "Innovative Teaching and Learning Process during COVID 19" does an excellent job of introducing fresh perspectives amid a pandemic. It is commendable that this amazing achievement was achieved by involvement with academic fraternity. It was our good fortune as editors of this book to read each and every piece, and in doing so, we uncovered several fascinating facets of the educational process. The term "innovation" has been thrown about more than any other in recent memory. Actually, there is no level of INNOVATION at which academic institutions throughout the world are not potentially participating. Our hope is that we will soon reach "INNOVATION 5.0" as a result of this mad dash for innovation in educational technology. Reading this book will help readers create opinions on this innovation process, especially as it pertains to the use of online platforms and e-resources in the delivery of lectures. That this book covers such a wide range of issues surrounding the paradigm change in education is a great accomplishment on the part of the writers. Each item in this book provided a detailed presentation of a different tool or new approach. During this pivotal period of educational reform, I want to congratulate the writers and publishers for producing such a fruitful result [8].

III. INTERVIEWS WITH EDUCATORS

Interviews with Educators

1. Selection of Participants:

- Selection Criteria: Teachers' background in online instruction at all levels of education (K-12, college, and university) was a deciding factor in their selection.
- We made an effort to ensure that the participants were diverse in terms of gender, age, educational background, and teaching experience. This was done to capture a wide variety of viewpoints [9].

2. Methodology:

- Semi-structured interviews: These interviews were carried out in a way that allowed for free-flowing discussion about online teachers' creative approaches, difficulties, and experiences.
- Interviews were videotaped with participants' permission, either in-person or remotely, and then transcribed for analysis as part of the data collection process.
- Ethical Considerations: The study method was conducted in accordance with ethical norms, guaranteeing anonymity, collecting informed consent, and honoring participants' viewpoints [10].

3. Themes and Findings:

Digital Divide and Accessibility:

- Teachers' Views on Students' use to Technology and the Internet: Teachers emphasized that students, especially those from disadvantaged circumstances, face significant barriers when it comes to having the means to use technology and the internet.
- One of the biggest obstacles to online learning that students from marginalized backgrounds encounter is a lack of personal devices, consistent internet access, and digital literacy skills.
- Plans to Improve Accessibility: Teachers spoke about programs to help students overcome barriers to technology, like offering loaner devices, reducing the cost of internet, and creating instructional materials that can be used offline.

b. Technological Infrastructure:

- Educators evaluated the current technical infrastructure to see if it was sufficient and reliable to facilitate online teaching and learning.
- obstacles with the Infrastructure Identified: Major obstacles included things like limited bandwidth, server failures, and incompatibilities with internet platforms.
- Teachers have voiced a desire to see online education platforms strengthened by investments in new hardware, better technical support, and the use of cloud computing as a means to increase the stability and scalability of these systems [11].

c. Pedagogical Adaptation:

- Strategies for Enhancing Student Engagement in Online Courses: Teachers discussed ways to rethink course material, use interactive technologies, and adapt teaching methods for use in an online setting.
- Creative Pedagogical techniques Used: Some of the most successful online pedagogical techniques were project-based learning, virtual simulations, and the use of multimedia materials.
- Educators considered the pros and cons of several pedagogical approaches to online learning and how well they supported student learning outcomes [12].

d. Assessment and Evaluation:

- Problems with online assessment that teachers have seen include issues with students' ability to cheat or plagiarize and doubts about the reliability of these tests.
- Ways to Keep Tests Honest: Some recommendations for ways to keep tests honest when given online include using proctoring software, rethinking exams to put more emphasis on analytical and practical thinking, and encouraging a culture of academic honesty.
- Suggestions for Enhancing Assessment Practices: In order to enhance assessment practices in online education, educators suggested a combination of formative and summative assessments, continuous feedback systems, and student-teacher cooperation in developing assessment criteria [13].

4. Cross-cutting Themes:

- Many educators have pointed out the interconnectedness of problems and solutions, highlighting the necessity for comprehensive ways to tackle the complex concerns in online education.
- Patterns in Educators' Responses: Educators' shared experiences, concerns, and goals in dealing with the challenges of online education were highlighted by common themes and patterns that arose from the interviews.
- Implications for Policy and Practice: The viewpoints of educators may provide light on how to best promote online teaching methods in Bengaluru via policymaking, budget allocation, and professional development programs.

5. Reflections and Limitations:

- Teachers' Views on the Research Process: Teachers gave comments on the interviews, saying they were grateful for the chance to talk about their experiences and provide ideas for bettering online education.
- It is important to exercise care when interpreting the results of this study due to its limitations, which include a small sample size, the possibility of bias in participant selection, and the use of self-reported data.
- Research Directions Suggested by Educators: Researchers have identified a number of potential directions for future studies, such as comparisons of various pedagogical approaches, investigation of novel technological means of improving online learning, and longitudinal studies of the effects of online instruction over time [14].

IV. DIGITAL DIVIDE AND ACCESSIBILITY ISSUES

1. Disparities in Access to Technology:

- **Economic Factors:** Many students from economically disadvantaged backgrounds lack access to personal devices such as laptops, tablets, or smartphones, which are essential for online learning.
- **Rural-Urban Disparities:** Students in rural areas often face greater challenges in accessing technology and reliable internet connectivity compared to their urban counterparts.
- **Socioeconomic Status:** The digital divide exacerbates existing socioeconomic disparities, as students from affluent families have better access to technology and resources for online learning [15].

2. Internet Connectivity Challenges:

- **Limited Internet Access:** Inadequate internet infrastructure in certain areas results in limited or unreliable internet access, hindering students' ability to participate in online classes or access educational resources.
- **High Costs:** Even where internet access is available, high costs of data plans or broadband subscriptions may be prohibitive for students from low-income households [16].
- **Technological Infrastructure:** Poor infrastructure, including outdated or inefficient networking equipment, further compounds connectivity issues, leading to slow internet speeds and frequent disruptions.

3. Digital Literacy and Skills Gap:

- **Lack of Digital Literacy:** Many students lack the necessary digital literacy skills to navigate online learning platforms, use productivity tools, or troubleshoot technical issues independently.
- **Training and Support:** There is a need for comprehensive training programs and ongoing support to equip students with essential digital skills required for effective online learning.
- **Language Barriers:** Students whose primary language differs from the language of instruction may face additional challenges in navigating online resources and understanding course content [17].

4. Physical and Cognitive Accessibility:

- **Accessibility Features:** Online learning platforms and educational materials often lack adequate accessibility features for students with disabilities, including visual, auditory, mobility, or cognitive impairments.
- **Alternative Formats:** Providing educational materials in alternative formats such as audio descriptions, subtitles, transcripts, and screen reader compatibility is essential for ensuring inclusivity and accessibility for all students.
- **Universal Design Principles:** Incorporating universal design principles into online course design can help create learning environments that are accessible to diverse learners, regardless of their abilities or disabilities [18].

5. Strategies for Addressing Accessibility Issues:

- **Equitable Access Programs:** Implementing equitable access programs that provide loaner devices, subsidized internet plans, and support for digital literacy training can help bridge the digital divide and ensure equal access to online education [19].
- **Collaborative Partnerships:** Collaborating with government agencies, non-profit organizations, and private sector partners can facilitate the provision of infrastructure, resources, and support services to underserved communities.
- **Inclusive Design Practices:** Adopting inclusive design practices in the development of online learning materials, platforms, and assessments can help ensure that they are accessible to students with diverse needs and abilities.

In order to help close the digital achievement gap and address accessibility concerns, educators and policymakers should strive to make online learning spaces more welcoming and equal for all students [20].

V. CONCLUSION

Providing fair access to online education in Bengaluru and beyond is greatly hindered by the digital divide and accessibility difficulties. Existing socioeconomic inequities are worsened and educational chances for disadvantaged populations are hindered by gaps in internet connection and technology, a lack of digital literacy skills, and insufficient assistance for students with impairments. Educators, lawmakers, and stakeholders from all walks of life must work together if we are to overcome these obstacles. More accessible and inclusive online learning environments that meet the unique needs of all students may be achieved via investments in infrastructure development, equitable access initiatives, and inclusive design approaches. In addition, underprivileged communities may benefit from the mobilization of resources and support services via the promotion of partnerships and collaborations among public and private organizations, as well as educational institutions. In the end, we can make sure that all students, no matter their background or circumstances, have a chance to flourish in the digital era if online education programs prioritize digital inclusion and accessibility.

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