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A comparative analysis of students' perceptions of online and hybrid learning models during the COVID-19 pandemic

Laura Ghafarshad * and Dr. S. Arun Mozhi Selvi Sundarapandi

Department of Education, Paris American International University, United Arab Emirates.

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Abstract

This study presents a comparative analysis of two quantitative investigations into students' perceptions of online education during the COVID-19 pandemic. While both studies employed structured online surveys, each targeted distinct dimensions of digital learning: the first focused on general experiences with online education, whereas the second examined content delivery, assessment practices, and the potential of hybrid models. Findings reveal overlapping themes in digital accessibility, alongside divergent attitudes regarding instructional preferences and learning challenges. The comparative analysis offers practical implications for the refinement of digital education strategies and policy-making in post-pandemic academic environments.

Background/purpose - COVID-19 had a significant impact on education, affecting not only educators' experiences but also students'. The purpose of this paper is to conduct a comparative analysis of two quantitative studies investigating students' perceptions of online and hybrid learning during the pandemic. By examining the similarities and differences in students' experiences—ranging from digital access and instructional preferences to emotional well-being and assessment practices—this study aims to contribute to a deeper understanding of how digital education strategies can be optimized in future learning environments.

Materials/Methods - This comparative analysis is based on two independent quantitative studies that explored students' perceptions of digital learning during the COVID-19 pandemic. Both studies utilized structured online questionnaires created in Google Forms and distributed among university-level students.

Practical implications - In practice, educational institutions should prioritize the enhancement of digital literacy for both educators and students to ensure effective participation in online and hybrid learning environments. Additionally, universities must strengthen emotional and social support systems to address the isolation and disengagement frequently reported by students. Finally, there is a clear need for more flexible and student-centered assessment approaches that maintain academic rigor while reducing stress and accommodating diverse learning needs.

Conclusion - This comparative analysis illustrates how student perceptions of online and hybrid learning during the COVID-19 pandemic reveal both shared challenges and differing preferences.

Keywords: Online Learning; Hybrid Education; COVID-19; Student Perception; Digital Access; Educational Challenges

1. Introduction

The COVID-19 pandemic necessitated a rapid and unprecedented shift from traditional, face-to-face instruction to various forms of digital education. This transition prompted widespread inquiry into the effectiveness, accessibility, and

* Corresponding author: Laura Ghafarshad

acceptance of online and hybrid learning environments. The present paper compares two empirical studies conducted during the pandemic, each exploring students' experiences with digital education. By identifying commonalities and divergences across both studies, this analysis contributes to a nuanced understanding of student needs and preferences in evolving educational contexts.

2. Literature review

The onset of the COVID-19 pandemic prompted an urgent transition from traditional face-to-face instruction to digital learning modalities across the globe. Scholars have examined this transition from multiple angles. Tadesse and Muluye (2020) and Tarkar (2020) highlighted systemic challenges in developing countries, including limited infrastructure and disparities in digital access. Radu et al. (2020) and Cesco et al. (2021) emphasized the impact of this shift on the quality of education and student engagement, citing technological constraints and the lack of real-time interaction.

Mental health implications were also widely reported. Laranjeira et al. (2021) and Maulana (2021) documented psychological stress among students resulting from prolonged screen time and social isolation. Similarly, Sahu (2020) and Toquero (2020) discussed the dual burden faced by educators and learners, pointing to emotional exhaustion and instructional fatigue.

Hybrid learning models have emerged as a potential solution, blending the flexibility of online learning with the structure of in-person instruction. According to Karakose (2021) and Ulugov (2024), these models may enhance student satisfaction by promoting interaction while maintaining accessibility. However, effective implementation requires a strong technological foundation, as noted by Eskaraeva (2024) and Stankovska et al. (2022), especially in transitional education systems like those in Uzbekistan.

This paper builds on these discussions by comparing two targeted empirical studies to offer a refined understanding of student perceptions and to inform future digital education strategies.

3. Results

3.1 Methodology

Both studies employed a quantitative research design, utilizing structured questionnaires distributed via Google Forms. The survey instruments captured a range of student perspectives on digital learning. The samples in both cases were comparable in terms of demographic characteristics, enabling a meaningful cross-study comparison. Data were analysed descriptively to assess patterns in perception and experience.

3.2 Infrastructure and Access

Access to digital infrastructure was consistently high across both studies. In the first study, 90% of respondents reported owning personal digital devices, and 81.8% indicated stable internet connectivity. Similarly, 90% of participants in the second study affirmed sufficient access to the technological infrastructure required for online learning. These findings suggest a broadly favorable technological environment for the deployment of digital education tools among the surveyed populations.

3.3 Learning Modalities and Preferences

Differences emerged in preferred learning modalities. The first study reported a majority preference (54.5%) for traditional, in-person instruction. In contrast, the second study indicated strong support for hybrid learning models, with 73% of participants favoring a blended approach. Key advantages cited by students in the second study included increased flexibility (59.26%), improved communication (34.07%), and reduced screen time (32.59%).

3.4 Online Learning Experience and Challenges

Both studies acknowledged the benefits of online learning, particularly in terms of flexibility. In the second study, 60.74% of students reported enhanced digital skills and improved time management. However, substantial challenges were also noted. The second study highlighted a lack of practical, hands-on experience (65.19%), while the first study emphasized reduced student motivation and comprehension in the absence of face-to-face engagement. Technical issues, including unreliable internet access and difficulties navigating platforms, were persistent barriers across both studies.

3.5 Social Interaction and Emotional Impact

Social isolation was a recurring theme. In the first study, 63.6% of students reported experiencing loneliness, and 27.3% expressed a longing for real-life interaction. The second study corroborated these findings, with 11.85% citing the absence of teacher-student interaction as a concern. Privacy issues were also prominent; 45.5% of students in the first study indicated they kept cameras and microphones off due to discomfort, reflecting broader concerns regarding personal space in digital classrooms.

3.6 Assessment Methods

Assessment practices were addressed in greater detail in the second study. A significant majority (83%) of students expressed satisfaction with online evaluation methods. Reported benefits included reduced stress levels (32.58%) and quicker turnaround in grading (5.18%). The first study did not examine assessment explicitly, indicating an area for future research and exploration.

3.7 Educator Experience

Instructor experiences were considered in both studies, albeit from different perspectives. In the first study, 66.7% of educators reported frustration due to limited interaction with students. The second study reflected student awareness of these challenges, with 34.81% acknowledging that educators faced difficulties adapting to the hybrid teaching format. This shared recognition suggests the need for additional training and support for faculty in digital pedagogy.

4. Conclusion

Both studies contribute valuable insights into students' experiences with online learning during the COVID-19 pandemic. While they share common ground in terms of digital access and technological challenges, they diverge in student attitudes toward hybrid learning and the perceived effectiveness of assessment methods. The comparative findings suggest that although online education provides flexibility and fosters digital skill development, sustained efforts are needed to address challenges in social engagement, content delivery, and instructional support. These insights are critical for shaping responsive and inclusive educational policies in the post-pandemic era.

4.1 Suggestion

The study found that crises such as the COVID-19 pandemic demand effective strategies to ensure the uninterrupted delivery of education. In this context, the implementation of a hybrid learning model is strongly recommended as a sustainable solution. To facilitate this transition, it is essential to enhance the digital literacy of educators to support effective teaching practices.

Furthermore, Universities should prioritize the mental well-being of both educators and students, as it significantly influences the overall quality of the learning experience.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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