

Hybrid Learning: Students' Perspectives

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Abstract

After the pandemic, a series of innovative learning methods and techniques that integrate the virtual environment into education have emerged and been perfected. The use of learning platforms plays an essential role in hybrid learning, providing an interactive digital environment that complements traditional teaching. They also allow access to a variety of educational resources, facilitate collaboration between students and professors, and offer flexibility in the learning process.

Hybrid learning combines face-to-face education with online teaching and learning, contributing to the creation of a modern learning environment adapted to the current requirements of education.

The study analyzes the opinions of adult students involved in postgraduate and master's training programs conducted at the National University of Science and Technology POLITEHNICA Bucharest. It aims to assess their perception of activities carried out in a hybrid learning environment. The study identified the effectiveness of learning, the challenges students face, and the advantages of hybrid training programs.

Keywords: Hybrid learning, online education, higher education, Moodle, adult learning.

How to cite: Oproiu, G.C., Chicioreanu, T.D., & Lițoiu, N. (2025). Hybrid learning: Students' perspectives. *Anuarul Universității "Petre Andrei" din Iaș Fascicula: Asistență Socială, Sociologie, Psihologie*, 31, 223-233.
<https://doi.org/10.63331/upasw/31/21>

1. Introduction

The rapid development of information technology tools and the emergence of virtual learning environments have facilitated a swift transition to online education. The COVID-19 pandemic marked a turning point for educational systems worldwide, compelling institutions to adopt online teaching as an alternative to traditional face-to-face instruction.

This transition posed numerous challenges for educators, students, and the educational process as a whole. For teachers, the primary difficulties included not only the rapid reorganization of instructional content and the adaptation of teaching-learning-assessment strategies to a digital environment, but also the effective use of technology¹.

Students, once they overcame issues related to internet connectivity and access to devices, had to adapt to new learning methods and strategies introduced by instructors. This shift also transformed their perception of the learning process. A transition from a constructivist to a socio-constructivist learning paradigm became evident, emphasizing collaborative learning, where students construct knowledge through interaction with peers and instructors. This gave rise to the concept of *online pedagogy*² which involves the transfer of knowledge through digital platforms and communication technologies.

In this context, the role of the online educator evolved to include the design, development, and delivery of digital courses. Educators began leveraging technology to enhance content and guide students toward achieving learning outcomes. Once initial barriers were addressed, both teachers and students recognized the multiple benefits of online learning³ including greater flexibility in terms of time, space, and access to resources⁴.

Higher education institutions also benefited from the adoption of virtual learning platforms, which reduced operational costs and expanded access to students who might otherwise be unable to attend in person⁵.

Given this new educational landscape, universities must now consider the profile of the current generation of students—digitally literate individuals who communicate, seek information, and engage in entertainment online, and who increasingly prefer to learn in virtual environments. For these learners, the flexibility offered by online education is both attractive and conducive to deeper engagement.

Viewed optimistically, the COVID-19 pandemic can be seen as an opportunity to rethink global educational models. In terms of instructional organization, several formats for online learning have emerged:

¹ N. Peimani și H. Kamalipour, „Online Education and the COVID-19 Outbreak: A Case Study of Online Teaching during Lockdown”, *Education Sciences* 11, nr. 2 (2021): 72, <https://doi.org/10.3390/educsci11020072>

² N. V. Thien, „Effectiveness of Online Learning When Implementing Collaborative Online Learning in Flipped Classroom”, *Technium Social Sciences Journal* 26 (2021): 234–249.

³ I. Dhull și A. Sakshi, „Online Learning”, *International Education & Research Journal [IERJ]* 3, nr. 8 (2017): 32–34.

⁴ A. Costley și C. Lange, „The Moderating Effects of Group Work on the Relationship between Motivation and Cognitive Load,” *International Review of Research in Open and Distributed Learning* 19, nr. 1 (2018): 1–23.

⁵ A. Erarslan și A. Arslan, „Online Learning Experiences of University Students in ELT and the Effects of,” *Language and Technology* 2, nr. 1 (2020): 44–58.

- **Partially online courses**, which integrate traditional materials (print or digital) with online components, supported by synchronous and asynchronous activities on digital platforms.
- **Fully online courses**, in which all instructional activities are conducted virtually.
- **Hybrid education**, which combines the benefits of both face-to-face and online learning. This model, also known as *blended learning*, emerged as a response to the need for social interaction and direct communication.

Hybrid education is now recognized as an innovative pedagogical approach that leverages the strengths of both modalities⁶. In this model, learning activities occur simultaneously in physical classrooms and online environments, with some students attending in person and others participating remotely.

Building on the lessons learned during the pandemic and capitalizing on the digital competencies developed by both educators and students, hybrid education has become a viable alternative for various academic programs⁷. This approach promotes the use of technology in learning, enhances student engagement, and fosters greater academic responsibility, while also creating opportunities for direct interaction⁸.

As a result, universities are increasingly interested in developing hybrid programs, which are not only cost-effective but also resource efficient. However, the successful implementation of hybrid education requires effective management across several dimensions.

First, institutions must ensure the availability of appropriate infrastructure, including virtual learning environments and comprehensive teacher training.

Second, pedagogical models, curricula, and instructional strategies must be adapted to suit the hybrid format. Post-pandemic, there has been a shift from a constructivist, learner-centred model to a systems-based approach, emphasizing principles such as learner autonomy, content accessibility, and flexible engagement. Students can interact with content both synchronously and asynchronously, with face-to-face sessions used to clarify individual learning needs.

A third critical factor is the student's own disposition toward hybrid learning, including their level of autonomy, time management skills, and overall attitude.

The integration of digital technologies with in-person instruction enables the creation of dynamic and engaging learning experiences that stimulate student participation and foster deeper learning.

⁶ A. Quiñonez, M. C. Flores, E. Quiñonez și R. M. Tambaco, „Hybrid Education: Current Challenges,” *Ibero-American Journal of Education & Society Research* 3, nr. 1 (2023): 276–79, <https://doi.org/10.56183/iberoeds.v3i1.629>.

⁷ İ. Y. Kuzu și C. Kurtoglu Yalçınii, „Investigation of the Effectiveness of Hybrid Learning on Academic Achievement: A Meta-Analysis Study,” *International Journal of Progressive Education* 18, nr. 1 (2022): 426–14, <https://doi.org/10.29329/ijpe.2022.426.14>.

⁸ N. Malik, A. Al-Hattami, I. Elmahdi și A. Abusin, „Hybrid Education and Institutional Readiness” (lucrare prezentată la 2023 *International Conference on IT Innovation and Knowledge Discovery (ITIKD)*, Manama, Bahrain, 2023), 9, <https://doi.org/10.1109/ITIKD56332.2023.10100289>.

2. Methodology

2.1. Objective

This paper presents the perspectives of adult learners enrolled in hybrid training programs at the National University of Science and Technology POLITEHNICA Bucharest. The instructional activities were conducted using Microsoft Teams for synchronous sessions and Moodle for asynchronous tasks such as homework submission and access to learning resources⁹. Additionally, some students had the opportunity to attend sessions in person, allowing for a blended learning experience.

The study aims to explore students' experiences and perceptions of hybrid learning. To this end, the research seeks to answer the following questions:

1. What are students' perceptions regarding the effectiveness of hybrid learning?
2. What advantages and challenges do students encounter in hybrid learning environments?

2.2 Participants

The participants in this quantitative study are adult learners enrolled in two types of academic programs at the university: master's degree programs and a postgraduate teacher training program. A total of 92 students voluntarily participated in the study, which also represents a limitation in terms of sample size and generalizability. The participants ranged in age from 24 to 60 years, with 72% identifying as female. The most of respondents (54.3%) were enrolled in master's programs (Table 1).

Table. 1. Participants of the study

Demographic variables		Percent
Gender	Female	72%
	Male	28%
Age	24-40	50,5%
	41-60	49,5%
The study program	Postgraduate (Teacher training program)	45,7%
	Master program	54,3%

2.3. Instrument

As part of the research, a quantitative study was conducted using a questionnaire-based survey. The instrument consisted of 23 items, including questions related to demographic variables such as age, gender, and type of study program.

2.4. Procedure

The questionnaire was administered online using the Google Forms platform. The collected data were processed and analyzed using Microsoft Excel. The study employed an

⁹ T. Thannimalai, „Teachers' Intention to Continue Using Virtual Learning Environment (VLE),” *International Journal of Academic Research in Progressive Education and Development* 10, nr. 2 (2021): 542–547.

observational-experimental approach and is classified as empirical research. Consequently, the findings are context-specific and cannot be generalized to a broader population.

2.5. Data analysis

The research approach used is quantitative, based on primary statistical analysis of the data obtained from the questionnaire. Based on the subjective opinions of the respondents, a quantitative analysis was attempted. This approach leads to the formulation of authentic conclusions in relation to the proposed objectives. even if the sample is not statistically representative. The efficiency of hybrid learning was analyzed from the following perspectives:

- the digital skills necessary to use the virtual learning environments (Microsoft Teams and Moodle);
- the efficiency of the use of platforms in remote learning activities;
- the difficulties encountered by students in hybrid learning;
- the advantages of hybrid learning.

2.6. Limitations of the Study

While this study provides valuable insights into students' perceptions and experiences with hybrid learning, several limitations must be acknowledged:

- The study was based on a relatively small sample of 92 participants, all of whom were students at the National University of Science and Technology POLITEHNICA Bucharest. As participation was voluntary, the sample may not be fully representative of the broader student population, limiting the generalizability of the findings.
- The study focused primarily on students' perceptions and did not include perspectives from instructors or administrative staff, which could have provided a more comprehensive understanding of the hybrid learning experience.
- Data analysis was conducted using Microsoft Excel, which, while sufficient for basic statistical processing, may limit the depth and complexity of the analysis compared to more advanced statistical software.
- The study was conducted in a specific institutional and cultural context, during a particular period of transition in education. As such, the findings may not be applicable to other institutions or educational systems with different structures or resources.

3. Results and discussions

The initial and final levels of digital skills were the first aspects analyzed in the study. When asked to assess their digital competencies at the beginning of the program, over 74% of respondents rated their skills as either *good* or *very good*. As anticipated, participants aged between 24 and 40 demonstrated the highest levels of digital proficiency (Figure 1).

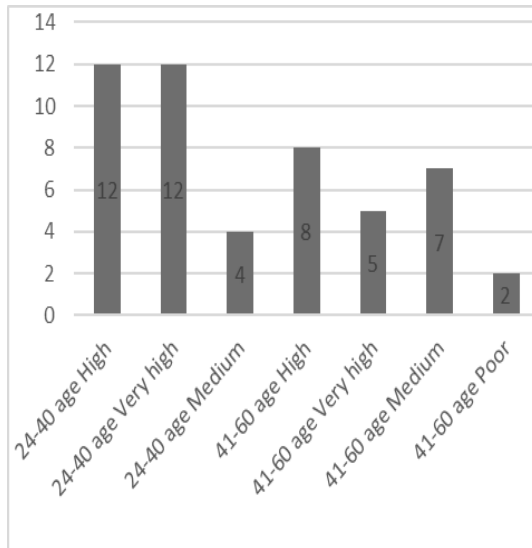


Fig. 1. The level of digital skills at the beginning of the program.

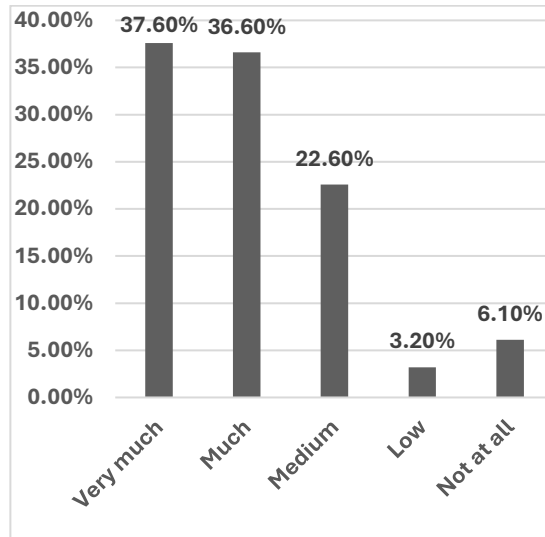


Fig. 2. Improvement of digital skills compared to the beginning of the program.

Participation in the study programs led to a perceived improvement in digital competencies for over 70% of respondents, who reported enhanced digital skills compared to their initial level (Figure 2).

Throughout the program, the most of participants received technological support, primarily from instructors (37.6%) and peers (29%). Additionally, a significant number of students reported having independently acquired the necessary skills to navigate the two digital learning platforms utilized in the program—Microsoft Teams and Moodle.

Previous research has indicated that well-developed digital skills contribute to increased learner confidence and comfort in online learning environments¹⁰.

When asked to evaluate the effectiveness of the two platforms, respondents generally perceived them as equally effective (Figure 3a). Microsoft Teams was predominantly used for synchronous sessions, while Moodle served as the primary platform for accessing course materials, submitting assignments, and engaging in asynchronous learning activities.

Another survey item explored students' perceptions of the relative effectiveness of face-to-face versus online learning activities. While 34% of respondents considered in-person activities to be more effective, nearly half indicated that both modalities were equally effective in terms of facilitating comprehension (Figure 3b).

These findings are consistent with responses to a related item, in which students were asked about their preferred mode of participation. A majority of 54% expressed a preference for a balanced approach, indicating a desire to engage equally in both face-to-face and online learning experiences.

¹⁰ J. M. Blocher, L. S. Montes, E. M. Willis, și G. Tucker, „Online Learning: Examining the Successful Student Profile,” *The Journal of Interactive Online Learning* 1, nr. 2 (2002): 1–12.

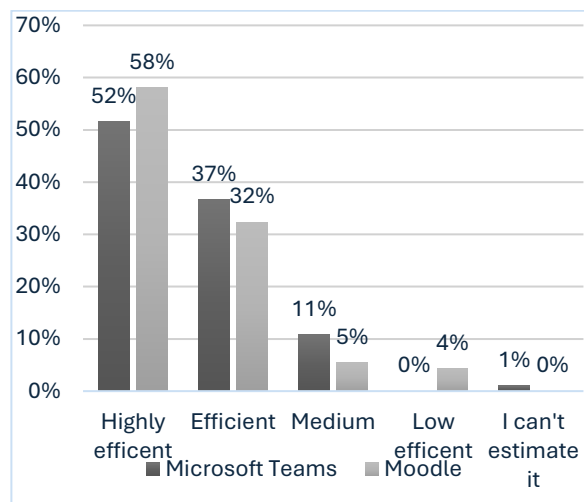


Fig.3a) The efficiency of the use of Microsoft Teams and Moodle platforms in hybrid learning

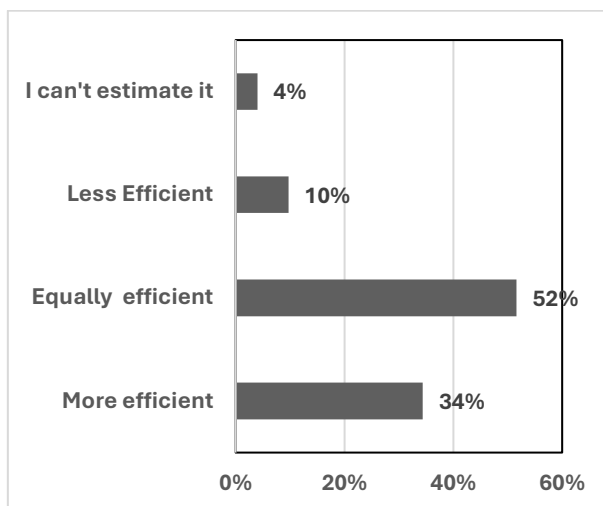


Fig. 3b) The efficiency of face-to-face activities vs synchronous online activities (Microsoft Teams)

Also, 52% of the students who participated in the study thought that the activities were equally efficient whether they were present live or remotely.

This fact may indicate that both the teachers (who have improved their online teaching strategies) and the students have overcome some barriers to online learning¹¹

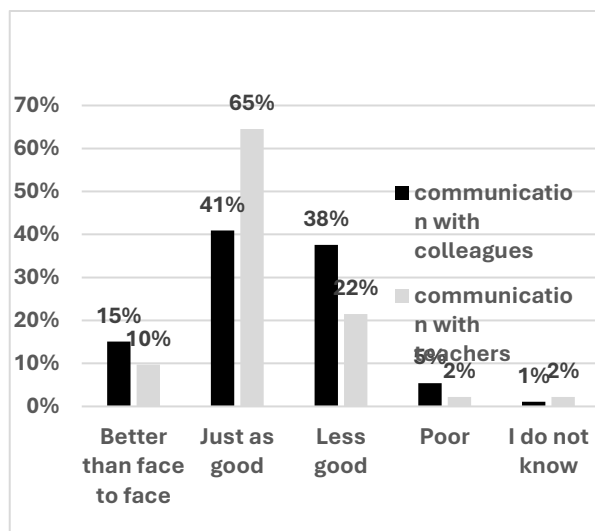


Fig. 4. Communication with teachers and colleagues online compared to face-to-face

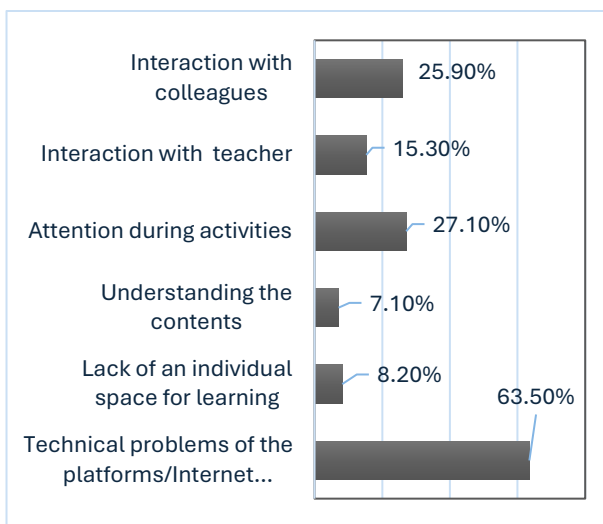


Fig. 5. Difficulties in synchronous online activities

Thus, with a good mastery of technology, the barriers to online communication have also been overcome. In the opinion of the students, communication with teachers is as good online as face to face (65%). Also, regarding communication with colleagues, only 15% believe that it is better online than face to face, while 38% consider that online communication is weaker than face to face.

¹¹ A. Torres, „Online Teaching Strategies: Lessons Learned from the Transition to Virtual Classroom,” *Journal of Convergent Research Interchange* 9, nr. 6 (2023): 619–28, <https://doi.org/10.47116/apjcri.2023.06.48>.

The respondents were also asked about the challenges they faced in hybrid learning, primarily related to online participation. When participating in online activities synchronously, some problems may arise related to:

- Technical problems of the platforms/Internet connection (63,5%)
- Understanding content transmitted online (7,1%)
- Concentration during synchronous activities (27,1%)

Regarding face-to-face activities, the main challenges reported are related to commuting to the university (67,7%) and a lack of time to engage in activities (68,6%).

Attention and concentration to activities tend to increase during face-to-face sessions; only 5,8 % of students feel they struggle to concentrate in the classroom. These students are adults who attend classes after work hours or on weekends, and online activities assist them in keeping up with the study program.

Hence, the motivation to engage in online activities is significantly higher than for face-to-face sessions, with 57% expressing greater interest (Figure 6).

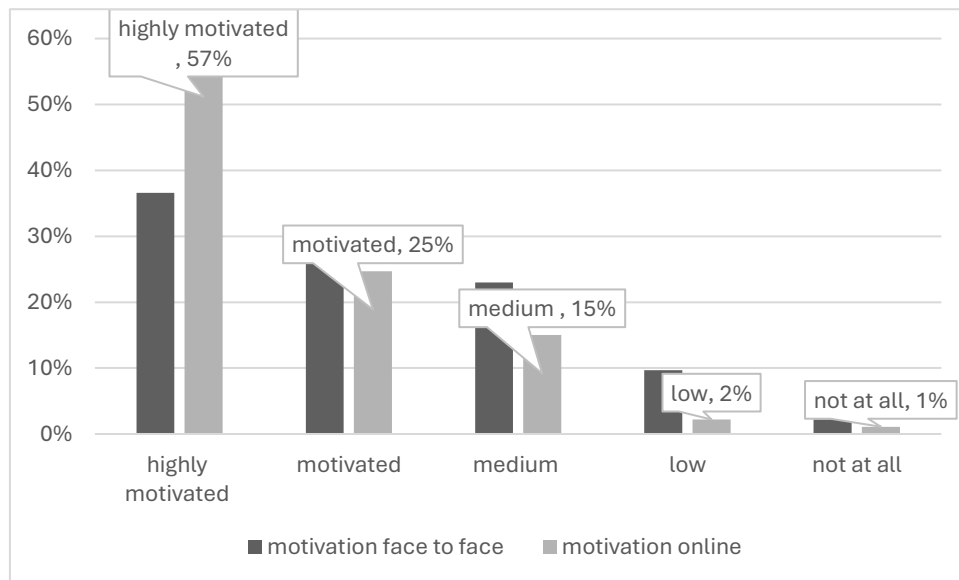


Fig. 6. Motivation in online/face to face activities

Among the activities favoured in hybrid learning, most students prefer hands-on applications (45,2%), clarification of theoretical information (17,2%), and engaging in debates based on online-asynchronous topics (21,5%).

When given the choice of participation format, 77,2 % would opt for hybrid learning activities, 15,2% for online-only activities, and 7,6 % for face-to-face-only activities.

This is particularly interesting given that these are adult learners, most of whom are over 40 years old and may not have highly developed digital skills.

It was initially assumed they would predominantly favour face-to-face interactions¹².

However, likely due to time constraints, multiple daily commitments, and improved digital proficiency, hybrid learning appears to be more appealing to them than solely face-to-face participation.

When asked whether the fact that the programme combines face-to-face and online activities influenced their choice of programme of study, 88% said it mattered a lot.

When asked to identify the advantages of hybrid learning, students highlighted several key benefits, particularly in relation to flexibility, accessibility, and personal development. The most frequently mentioned advantages include:

- The ability to participate in courses even when physical attendance is not possible on certain days
- Time savings and the use of engaging digital applications
- Flexibility in scheduling, independent of classroom constraints
- Continuous access to course materials at any time
- Improved time management
- Suitability for students who are employed
- The opportunity to clarify content in person if something was unclear during online sessions
- The possibility to attend online classes even while at work
- Enhanced competence in using digital technologies
- A balance between self-paced learning and teacher interaction
- Development of digital skills and promotion of lifelong learning opportunities

These responses reflect the adaptability of hybrid learning to the diverse needs of adult learners, particularly those balancing academic responsibilities with professional and personal commitments.

4. Conclusions

Hybrid learning emerges as a viable and effective solution for adult learners who may have limited free time or underdeveloped digital skills but are motivated to pursue further education. Students enrolled in such programs are expected to demonstrate autonomy in learning, strong motivation, and a willingness to enhance their digital competencies.

For 71% of the participants in this study, the ability to engage in online learning activities was considered highly important.

The findings highlight several advantages of hybrid learning for adult students:

- Flexible access to learning materials and activities, tailored to individual schedules and needs.
- Improved time management and adaptability to personal and professional responsibilities.

¹² T. Ginzburg și E. Sarva, „Comparison of Knowledge Retention in Face-To-Face and Online English Language Learning for Adults,” în *81th International Scientific Conference of the University of Latvia 2023. Human, Technologies and Quality of Education* (2023), <https://doi.org/10.22364/htqe.2023.26>.

- Increased accessibility to educational content and resources.
- Support for working professionals who may not be able to attend in-person sessions.
- Opportunities for both synchronous and asynchronous participation.
- Enhanced development of digital skills and lifelong learning habits.
- Time efficiency, particularly for those attending online sessions.
- Improved comprehension through the combination of online and face-to-face interactions.
- Reduced dependency on physical presence, making location less of a barrier.

Despite these benefits, students also identified several limitations of hybrid learning, including technological challenges, internet connectivity issues, and difficulties in understanding content online—issues that can often be mitigated through in-person participation. Additional challenges related to commuting and time constraints for face-to-face sessions were also noted.

To effectively implement hybrid learning, universities must address several key areas:

- **Teacher training and mindset.** Educators should be prepared to integrate face-to-face and virtual instruction, foster critical thinking, collaborate across disciplines, and adopt team-teaching approaches.
- **Instructional design.** Teaching strategies and curricula must be adapted to suit various delivery modes (synchronous, asynchronous, face-to-face, online, hybrid).
- **Student readiness.** Adult learners must be responsible, self-motivated, and capable of managing their learning independently.
- **Infrastructure.** Adequate technological resources and facilities are essential to support hybrid learning environments.

Hybrid learning has had a significant impact on learners' academic engagement and motivation to complete their studies. While this approach should be encouraged, its success depends on institutional support, including teacher training and robust infrastructure¹³. In the current global socio-economic context, adapting higher education to hybrid models is essential for enhancing learning efficiency and accessibility.

Without a positive institutional attitude, well-prepared educators, and sufficient technical resources, hybrid learning cannot reach its full potential.

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