

Exploring Teachers' Readiness For Hybrid Learning Models: Preparedness And Challenges



Dr. Sumera Irum	Department of Distance Continuing and Computer Education (DC&CE), Faculty of Education, University of Sindh, Pakistan sumera.irus@usindh.edu.pk
Dr. Tarique Bhatti	Faculty of Education, University of Sindh, Elsa Kazi Campus, Sindh, Pakistan
Dr. Muhammad Dilshad	Government City College, Hyderabad. Sindh

Abstract: *The primary aim of the work was to explore the preparedness of students to hybrid learning models and explore the possibilities and challenges of hybrid learning in the Faculty of Education, University of Sindh. The research took a mixed-method approach to enable the collection of both quantitative and qualitative data. The study population included 830 students studying at the Faculty of Education, University of Sindh, in the 2026. For the quantitative part, 100 students were selected as the sample with the help of Yamane's formula and random sampling, while for the qualitative part, semi structured interviews were conducted, till saturation. After, conducting interviews from 7 participants researchers' reach saturation point. Research instruments to collect data were a structured questionnaire and a semi-structured interview. The quantitative data were analysed using frequency, percentage, mean, and median, whereas the qualitative data were analysed using thematic analysis. The key results were that the level of readiness of students towards hybrid learning was moderate to positive. Flexibility, access to learning materials, and skill development were the key opportunities, and poor concentration, poor interaction, uneven participation, and poor academic support were the key challenges. The research suggested training, improved LMS and internet support, and clear institutional guidelines for hybrid learning.*

Keywords: Hybrid learning, Student readiness ,opportunities, Higher education, Mixed-methods research, Educational technology, Faculty of Education

Introduction

The growth of digital technology has altered how higher education is provided, shifting the learning outside of the physical classroom and bringing hybrid forms more into university pedagogy. Bouilheres et al. (2020) believe that blended and hybrid modes have transformed the student learning experience as they offer flexibility with a structured academic approach. This change was even more prominent following the pandemic, when facilities had to reevaluate teaching continuity and access. The

OECD (2021) demonstrates that the pandemic increased structural changes in higher education and compelled universities to choose more models based on technology instead of perceiving online learning as a short-term solution. Hybrid learning in this sense is no longer merely an emergency response but a new form of education, which must be institutionally prepared and student-ready.

The preparedness is significant since the success

of hybrid learning will not only be determined by the existence of digital platforms, but also by how the students can engage with the mixed learning setting in a safe and efficient manner. According to Prifti (2022), self-efficacy is at the heart of student satisfaction with blended courses, implying that preparedness is strictly connected with the quality of learning as opposed to access. This refutes overly positive beliefs that technology as such enhances education. McCarthy and Palmer (2023) also observe that successful blended learning must be carefully designed, supported, and pedagogically coherent, rather than relying on digital tools. The significance of such arguments is that they move the focus of the technological provision to human and academic circumstances that are required to make meaningful participation.

The problem is particularly topical in situations when the digital transition is not even. According to UNESCO International Bureau of Education (2023a), hybrid education offers new opportunities to include, persist, and assess flexibly, but these benefits are tailored to local realities. The practice of technology-supported learning in Pakistan (and especially in Sindh) has been shaped by disparate access, varying digital competence and different institutional capacity. Naveeda and Wajahat (2024) demonstrate that students in Pakistan had significant obstacles to e-learning, such as connectivity issues and unequal learning opportunities, an indication that readiness cannot be presumed in all higher education contexts.

The Faculty of Education students present a notably significant population to research since they will be future teachers whose personal experience with hybrid learning can impact their perception of the teaching practice, support of learners, and the use of educational technology in the future. According to Islam et al. (2022), student-centred blended learning is highly reliant on active engagement and adaptation of learners, which is why education students are a good option to explore the current participation and future professional implications. Simultaneously, hybrid learning has its

opportunities and challenges. Flexibility and digital literacy development are the benefits that Rahmatulloh and Napis (2023) note, whereas Kanwal et al. (2023) focus on ongoing difficulties with engagement, infrastructure, and adaptation. Thus, this research investigates the preparedness of students to hybrid education in the Faculty of Education, University of Sindh, with a specific focus on the opportunities and challenges they see in this emerging model of education.

RESEARCH AIM AND OBJECTIVES

This study intends to investigate the preparedness of students in the Faculty of Education, the University of Sindh, to hybrid learning models by reviewing their preparedness to learn in digitally facilitated learning settings and how they view the opportunities and challenges related to this type of learning. The research also aims to come up with contextualised evidence that can assist in more effective planning of the institutions and pedagogic practice.

1. To analyse the degree of student preparedness towards hybrid learning models in the Faculty of Education, University of Sindh.
2. To determine opportunities and challenges that students relate to hybrid learning settings.
3. To investigate the experiences and perceptions of students about hybrid learning.

LITERATURE REVIEW

Hybrid Learning as a Pedagogic Model in Higher Education

Hybrid learning is more to be viewed as a designed instructional model rather than just an amalgamation of online and face-to-face learning. UNESCO International Bureau of Education (2023a) introduces hybrid education as a systematic solution that involves physical presence, online engagement, and flexible evaluation in ways that potentially expand participation, provided that the institutions recognise it well. This policy perspective is

practical yet tends to be too optimistic since it presupposes that flexibility naturally leads to the improvement of learning conditions. McCarthy and Palmer (2023) oppose this assumption by demonstrating that blended and hybrid learning only work when a course design is consistent, expectations are articulated, and digital activities are consistent with learning outcomes. This implies that hybrid learning ought to be evaluated based on the quality of pedagogy and not technological innovation.

Bouilheres et al. (2020) believe that hybrid learning is able to transform the student learning experience by enhancing access to materials, enabling independent study, and enabling various types of interaction. Nevertheless, their discussion primarily corresponds to systems in which students can freely switch between online and classroom modes with relative ease. The latter stance is less persuasive in the context of unequal access, digital confidence, and consistency in teaching. The article by Islam et al. (2022) adds weight to the discussion by stating that blended learning that is student-centred is based on active engagement and intentional support instead of passive delivery of content. This is a valuable correction as it demonstrates that hybrid learning cannot be brought down to the level of uploading lecture slides or recording classes. Istenič (2024) goes a step further to differentiate between integrated and distributed models of blended learning, suggesting that not every hybrid arrangement is just as effective. Thus, there is growing literature to consider hybrid learning as a pedagogic and organisational framework that may be valued based on the circumstances, design and learner preparedness.

Student Readiness in Technology-Enhanced and Hybrid Learning

The idea of Readiness is a major theme in hybrid learning since the students might have access to technology, but are not fully prepared to learn using technology. Prifti (2022) reveals that self-efficacy correlates well with satisfaction in blended courses, which implies that confidence is not a peripheral matter but a fundamental requirement of successful involvement. It matters since most institutional discourses pay

more attention to platforms and infrastructure and underestimate the role of beliefs of learners' beliefs in their own competence. Wakenshaw et al. (2024) also highlight the aspect of student preparedness in blended learning, but their example of higher education in the United Kingdom represents a system that has more robust digital support systems than many developing areas. Consequently, their findings cannot be blindly applied to other environments like Sindh.

Preparedness is multidimensional as well, not technical. According to Assefa et al. (2024), learning readiness is associated with academic competence and student engagement, which means that readiness consists of behavioural and motivational aspects along with practical skills. This serves as a helpful extension since it takes the debate out of the ownership of the devices and acknowledges that willingness to engage is important in addition to capacity. According to Masalimova et al. (2024), the post-pandemic experiences regarding e-learning are still ambivalent among higher education students, which indicates that the acceptance of technology does not necessarily lead to permanent acceptance. Alwadood et al. (2023) also discovered that both convenience and difficulty influence student perceptions of hybrid learning, which implies that preparations might not be associated with a simple approval but ambivalence. This literature is thus useful in demonstrating that readiness comprises access, digital skills, confidence, engagement, and motivation. Simultaneously, much of this literature is founded on general higher education contexts and does not pay much attention to institution-specific variations, a critical weakness of studies of less-resourced institutions.

Opportunities and Educational Value of Hybrid Learning

The literature introduces hybrid learning as having a number of educational opportunities, particularly in the aspects of flexibility, continuity and learner autonomy. OECD (2021) claims that the post-pandemic change in higher education has made flexible learning models more at the centre of institutional resiliency, and

that hybrid systems can help in continuity during disruption, and also increase access. This is a point that is convincing at the strategic level, but is more likely to represent success from the perspective of institutions and not from the real lives of students. The policy approach to encouraging hybrid education by UNESCO International Bureau of Education (2023b) also emphasises inclusion and flexibility, yet fails to acknowledge the disparity of implementation in local settings.

Hybrid learning could be more directly beneficial at the classroom level when it enables interaction and independent learning in equal measures. According to Rahmatulloh and Napis (2023), flexibility and development of digital literacy serve as the main opportunities of higher education hybrid learning, demonstrating that students can acquire both practical technological competence and academic learning. This is especially applicable to education students whose roles as teachers in the future may demand that they are conversant with technology-based teaching. Ali et al. (2023) give this addition a boost by reporting positive results regarding online and blended modes, although comparative studies of the type run the risk of treating performance outcomes as evidence of quality without thoroughly examining learner experience. Breitschwerdt et al. (2025) also show that students value having choices between on-site and online participation in synchronous hybrid settings. Combined, these studies indicate that the possibilities of hybrid learning exist, and it relies on pedagogic organisation, clarity of expectations, and a student population which is willing to make the most of the flexibility instead of fighting within it.

Challenges and Limitations in Hybrid Learning Practice

Despite the fact that hybrid learning is usually advocated as innovative and flexible, the literature shows that there is always a serious challenge in implementing the new approach. Global Education Monitoring Report Team (2023) notes that educational technologies must not be viewed as neutral since their advantages rest on the ability of the individuals to access

them, those who govern them, as well as the needs that should be prioritised. This critique is particularly notable with regard to hybrid learning since not all students have equal access to devices, the internet, and study space. Naveeda and Wajahat (2024) present powerful evidence from Pakistan that obstacles to digital learning experiences include poor connectivity, unbalanced resources, and inadequate conditions of learning at home. Their results help understand that the prospect of flexibility can hide an inequality of participation that is profound.

The difficulties are not purely technical, as indicated in other studies. According to Kanwal et al. (2023), blended learning at the university level presents challenges regarding engagement, adaptation, and long-term participation, which implies that even with digital access, students might find the hybrid environment challenging. In their systematic review, Gudoniene et al. (2025) support this fact by demonstrating that interaction, support, assessment, and instructional design present continuous tensions in hybrid teaching and learning in higher education. According to McCarthy and Palmer (2023), poor course design may result in the learning experience being fragmented and lacking coherence. These results contradict the naive assumptions that hybrid models are necessarily more friendly to the learners. Students can have motivation issues, communication issues, and dual learning space problems even in institutional systems that are working. The literature thus recommends that hybrid learning cannot be judged solely by its possible benefits, but it can minimise exclusion, sustain engagement and facilitate meaningful participation in the actual educational environment.

Research Gap and Relevance to Sindh

Although the body of literature about blended and hybrid learning has expanded, there is still an evident gap in context-specific findings in the context of Sindh and other higher education institutions. Most of the literature is policy-focused, such as UNESCO International Bureau of Education (2023a), or even grounded on international systematic reviews, such as

Gudoniene et al. (2025), which offer general advice, but not the way in which hybrid learning is practised in particular local institutions. Pakistani studies, including Naveeda and Wajahat (2024), find digital barriers but do not target students in education faculties, nor the problem of readiness as a multidimensional problem. This is important, since the students of education are future teachers and their own educational experience can influence their future professional practice. A survey in the Faculty of Education, University of Sindh, is thus useful, in that it can produce local data on preparedness, opportunities and difficulties in a local institutional and regional context, rather than basing it on assumptions made in very different systems.

RESEARCH Methodology

There was a mixed-method approach due to the necessity of both quantifiable trends and a more explanatory approach to the study. Quantitative strand was to be applied to find out the general trends in the readiness and perceptions of students, and the qualitative one was to investigate the experiences and perceptions of students more deeply. This design was suitable since the readiness for hybrid learning relates to more than the technological access; it encompasses confidence, involvement, flexibility, and perceived usefulness. According to McCarthy and Palmer (2023), hybrid learning should be investigated with consideration of the quality of the experience of learners instead of technological provision. Similarly, Naveeda and Wajahat (2024) demonstrate that the experiences of technology-supported learning among students in Pakistan are influenced by practical and contextual obstacles, which justify the adoption of a context-sensitive mixed-methods design.

The study population included 830 students in the Faculty of Education, University of Sindh, in 2026. To calculate the target sample size in the case of the quantitative component, the formula developed by Yamane was used:

$$n = \frac{N}{1 + N(e^2)}$$

Where:

- n = sample size
- N = total population
- e = margin of error

Therefore, the margin of error accepted was about 9.4 percent and the sample size needed in the survey was 100 respondents. Though the numerical target was justified by the formula proposed by Yamane, the real respondents were chosen by convenience sampling since the data collection process was influenced by the accessibility, time constraints, and willingness to participate. Such a difference was critical since the formula provided the justification for the size of the survey sample, whereas convenience sampling described the practical process of the recruitment of participants.

In the qualitative section, semi-structured interviews were conducted. The interviews would proceed until the responses started revealing repetition and no new substantially important issues were arising, which indicated the saturation level. After, conducting seven (7) interviews researcher reached saturation level. The sample used in the interview was deemed to be suitable for a small exploratory study aiming to get in-depth perspectives on readiness, opportunities, and challenges in hybrid learning.

Data collection was done using two instruments. The survey was structured as a questionnaire. It contained questions on access to digital resources, digital skills, confidence in the use of learning technologies by students, attendance in hybrid classes, and perceived opportunities and challenges of learning in a hybrid environment. The second was a semi-structured interview, which contained open-ended questions to get insight into the personal lives of the students, their perceptions of readiness, and the challenges they face in a hybrid learning context. These two tools were used to enable the study to use breadth and depth in a rational manner.

The tools were revised to be clear and relevant, such that the items were easy to understand and corresponded to the objectives of the study before full data collection. Such a move was needed since ambiguous or vague items can undermine the quality of results, particularly in

the field of educational research, where terms like readiness and engagement can have different meanings among the participants. The process of data collection was done in phases. To begin with, the institutional setting of the study was allowed to take place. Subsequently, the Faculty of Education's eligible students were contacted. In the case of the survey, questionnaires were used and handed to the students who were available and willing to complete them and 100 responses were received. In the qualitative stage, students who were accessible and were willing to give more detailed opinions were invited to participate in semi-structured interviews. All participants were informed of the purpose of the study before participation, and informed consent was gained before completing the surveys and before each interview.

Quantitative data were examined with the help of descriptive statistics, i.e., frequency, percentage, mean and median. These measures were chosen since the study was a description of patterns of readiness and perception and not a test of causal relationships. Thematic analysis was the method used to analyse the qualitative data, whereby the responses obtained during the interviews were read thoroughly, coded, sorted into categories and broadened into themes. According to Istenič (2024), thematic analysis can be applied especially effectively in blended and hybrid learning studies since it can highlight common experiences and context-specific meanings. The themes in this study were formulated based on the willingness of students, perceived opportunities and challenges encountered in hybrid learning.

Table:01 showing valid Responses

Indicator	Category	Frequency	Percentage
Valid respondents	Students	100	100.0

Table 2 reports the key readiness indicators and reveals that students exhibited an overall positive orientation to the hybrid learning, but the readiness did not turn out to be the same across all the items. The confidence in the usage

Ethical considerations were observed during the research process. The study was voluntary, and no student was coerced into participating in the study. The subjects were made aware of the objective of the study and their right to withdraw at any time. Confidentiality and anonymity were maintained by making sure that no personal information was given to identify the individuals when reporting the findings. No data were gathered to be utilised in any other way than in academics. Such ethical considerations were necessary since the study involving students should safeguard the privacy, dignity, and informed choice throughout the process.

DATA ANALYSIS AND FINDINGS

Quantitative Finding

The quantitative strand of the study has the respondent profile in Table 1. Since the survey dataset was built based on the response items alone, there were no other demographic variables in the dataset, such as gender, age, semester, or year of study. That is why the quantitative profile is restricted to the number of valid cases. The table indicates that 100 responses were all valid in the analysis, and this implies that the dataset was complete and that there were no invalid or missing responses when computing the descriptive statistics. Though this makes the comparison of the responses across the demographic groups impossible, it nevertheless gives a consistent foundation in determining the general trends in the preparedness of students to hybrid learning and the perception of the opportunities and difficulties of this educational method.

of digital tools, an ability to adapt to hybrid learning, technical competence, and the overall learning experience all yielded means near 3.70, with 4 as the median, which is an indication that the prevailing pattern of response was

agreement. These data indicate that the majority of the students did not identify themselves as not ready to engage in hybrid learning; instead, they believed that they were fairly competent enough to operate in this type of learning. Time management had a very slightly higher mean value of 3.77, which means that students thought that hybrid learning was a little supportive of their study routine organisation. Access to the internet and devices was the strongest readiness-related item, with a mean of 4.20 and a median of 4, indicating that the majority of respondents felt that they had the minimum technological resources to participate.

However, the trend is more obligatory in the case of viewing participation. The mean readiness was the lowest when participating in

hybrid classes at 3.29. This is also over the scale, but much lower in strength than the other items of readiness. The significance of this distinction is that it shows that preparedness in this study was higher at the access and self-perceived capability level compared to the active academic engagement level. In other words, students appeared to feel more ready to work in a hybrid learning setting than being able to do it on a large scale and on a regular basis. This difference is important as it avoids a simplistic definition of readiness. A student may have a device, an internet connection, and some basic technical confidence, yet be timid, passive, or less engaged in hybrid classes. This table, therefore, indicates that the general ability of students was moderate to positive, including a definite deficiency in sustained engagement.

Table 2: Showing the readiness of Students.

Item Code	Statement Focus	Mean	Median
Q1_conf	Confidence in digital tools	3.70	4
Q2_access	Access to internet/devices	4.20	4
Q3_adapt	Adaptability to hybrid learning	3.69	4
Q4_skill	Technical skills	3.70	4
Q5_time	Time management	3.77	4
Q6_part	Participation in hybrid classes	3.29	4
Q7_exp	Overall learning experience	3.70	4

Table 3 shows on opportunities of hybrid learning as they are perceived and shows some of the better outcomes in the dataset. The most common mean of 4.31, median 4, gave the highest degree of agreement: the overall perception of hybrid learning as more convenient and adaptable to students in managing their academic tasks was strong. This indicates that the most obvious benefit of hybrid

learning identified by the respondents was flexibility. Materials and resources were also rated highly, with a mean of 4.20 and a median of 4, and this indicates that students perceived hybrid learning as enhancing access to academic content. In comparison, the growth in digital and independent learning skills, although positive, had a smaller mean of 3.70. This shows that the students did recognise some developmental

value in hybrid learning, but they believed it was useful to them in the short-term, which was more than its extended educational value.

This trend is significant as it indicates that students perceived hybrid learning as a very accommodating and resource-filled construct instead of a highly transformative learning

philosophy. Even convenience and access elicited the most positive responses, rather than other, more intricate academic benefits. This does not diminish the importance of the findings, but can give a more realistic view of what students actually enjoyed most of all in hybrid learning.

Table 3: Opportunities of Hybrid Learning

Item Code	Statement Focus	Mean	Median
Q8_flex	Flexibility in study	4.31	4
Q9_skilldev	Development of digital/ independent skills	3.70	4
Q10_accessmat	Access to materials/resources	4.20	4

A less consistent pattern of responses is observed in Table 4, which summarises the challenge items. The difficulty of being able to remain focused on aspects of online learning yielded a mean of 3.20, and a median of 3, indicating that it was a moderate level of difficulty. This means that this issue of concentration is not such a small one, though it may not be viewed as being too severe. Learning technical issues provided a lower mean of 2.80 and median of 3, which means that issues surrounding technical problems did not have the biggest division of respondents and that the issues were not the most predominant in this data set. This result is significant as it implies that technological breakdown was not the primary challenge in hybrid learning. Instead, the learning experience of engagement, alertness,

and regularity in the online components of hybrid learning might have proved to be the bigger issue.

Combined, the quantitative results indicate that there was a moderate to strong readiness of students to hybrid learning, particularly in access, flexibility, and general digital competence. On the other hand, the lower scores in preparation and concentration suggest that the preparation was not comprehensive. These statistics, specifically, reflect an ambivalent assessment: students mostly felt positive about hybrid learning and recognised its advantages, but the quality of interaction in that model was a less strong feature that needed a greater academic corroboration.

Table 4: Shows the Challenge faced by Students.

Item Code	Statement Focus	Mean	Median
Q11_focus	Difficulty maintaining focus online	3.20	3
Q12_techprob	Technical issues affecting learning	2.80	3

Qualitative Analysis

The qualitative results were grouped into three

major themes, which summarised the way students at the Faculty of Education, University

of Sindh, understood and experienced hybrid learning. These themes factored in the perceived practical value as well as the ongoing constraints of hybrid learning as perceived by the participants.

Theme 1: Flexibility and Convenience as the Main Strength of Hybrid Learning

One of the main themes which were common in the interviews is that hybrid learning had been appreciated due to its flexibility. Participants termed it a practical model that enabled them to proceed with their studies in a more controlled manner in terms of time, place, and accessibility of learning materials. Participant 2 explained that Hybrid learning allows me to cope with studies more conveniently since I can take part in some classes online and save my time on travelling. Similarly, Participant 5 indicated that it is effective in the sense that, even when a student is unable to attend physically, they will still be able to learn. Such answers indicate that students did not view hybrid learning as a technological change only; they realised it as a means of making education manageable in daily limitations.

This flexibility was, however, not considered a free ride. Other participants indicated that convenience might also promote less discipline in case courses were poorly structured. Participant 1 observed that Hybrid learning is good, but students fail to take online lessons seriously when teachers fail to provide adequate supervision. This indicates that flexibility was appreciated, but not idealised. It worked well with clear academic expectations and structured teaching. Participant 6 also indicated that Hybrid learning can be of use in education, particularly where students can access notes and recordings; however, it must be adequately supervised. These perceptions indicate that respondents did not give so much importance to innovation, but to the practical continuity that hybrid learning provided. The theme in general indicates that flexibility and convenience were an inherent strength of hybrid learning, but the educational value of the system relied on how the system was organised and academically serious.

Theme 2: Readiness Depended on Digital

Confidence Rather than Simple Access

A second theme was that preparing to engage in hybrid learning had not only to do with the possession of devices or internet access, but also confidence in the ability to use digital tools. Some of the participants identified themselves as being somewhat conversant with technology, but not equally conversant with hybrid learning. Participant 3 said that I am well aware of how to utilise mobile apps and online platforms; however, at times, I lack full confidence as the tasks get more technical. This reaction indicates that there existed a difference between access and ability. Students might look digitally connected, but might be confused about the applications of technology in academics.

Participant 4 also elaborated that students can have phones and internet, but this does not imply that they are totally prepared in terms of hybrid classes. The fact that it makes this observation is very important since it negates a shallow definition of readiness as simply having access to digital resources. In the descriptions of the participants, readiness encompassed confidence, familiarity, and shifting between classroom and online requirements. Participant 7 stated that, initially, hybrid learning was challenging, but as I practised more, I was able to be more comfortable. This implies that preparedness did not exist but was acquired with time as a result of exposure and adaptation.

In the meantime, interviews showed that this was disproportionately promoted. It was more readily accustomed to other students, and still, some students were unwilling to attend online. Participant 1 observed that a high number of the students could be involved online, but not necessarily participants, because they are not fully confident. This means that confidence was a determining factor in engagement, not technical skill. Overall, this theme illustrates that the readiness of the students to hybrid learning was a complicated issue. Digital confidence was as crucial as digital access, and preparation was instead a slow adaptation process, rather than a yes-no scenario.

Theme 3: Engagement Problems and Weak Support Reduced the Effectiveness of Hybrid

Learning

The third important theme was the issues students faced in managing and receiving support in hybrid learning. Though participants admitted the practical advantages of hybrid learning, they also talked about problems with attention, interpersonal interaction, and orientation. Participant 5 also expressed that in online aspects of hybrid learning, students are easily distracted since the environment is not similar to the classroom. This implies that it was not just a technical problem but more of an educational one because the online world tended to diminish concentration and seriousness. Participant 2 also observed that online students disengaged and remained silent sometimes, thus face-to-face classes were better for discussion. These reactions imply that hybrid learning may undermine interaction if teachers fail to lead participation.

The other concern expressed by the participants was the lack of support for adapting to the requirements of hybrid learning. Participant 6 commented that students should be well instructed on how to study in the hybrid mode; otherwise, they will attend and not engage. This remark is significant in the sense that participation was not regarded as a criterion of meaningful learning. Students desired greater organisation of orientation and better-defined assistance to become fully involved. Participant 3 further elaborated that, when internet issues occur or the platform is disorienting, students become frustrated and cease to respond. This connects infrastructural obstacles to less academic involvement.

The theme thus reveals that the major flaws of hybrid learning were not just some external issues of connectivity, but also internal issues of learning, like lack of interaction, lack of concentration and lack of guidance. Respondents never dismissed hybrid learning, but they were sure to emphasise that it was essential to have more robust support structures and more conscious attempts to ensure students remained engaged in both the physical and online classroom.

DISCUSSION AND RECOMMENDATION

The results of this research reveal that students in the Faculty of Education, University of Sindh, were not unprepared in terms of hybrid learning, but preparedness was conditional and uneven as opposed to full. The quantitative results indicated moderate to high preparedness in digital resource access, confidence in tool use, adaptability and time management, and the qualitative results indicated that students continued to make a distinction between access and full preparedness to learn in a hybrid environment. This trend, together with the other one, validates the thesis presented by Prifti (2022) that in blended learning, the notion of readiness strongly correlates with self-efficacy, but not with technical access. It also supports the larger perspective of readiness promoted by Assefa et al. (2024), who believe that learning preparedness is related to engagement and academic capability instead of mere technological accessibility.

The most significant finding was that access to the internet and devices was one of the highest quantitative scores, the mean was 4.20, but the interviews revealed that access did not eliminate hesitation, unequal confidence, and participation challenges. This is important since it dispels the limited thinking that only digital provision suffices to achieve successful hybrid learning. Similar recommendations are made by Wakenshaw et al. (2024), who believe that readiness with blended learning goes beyond the technological infrastructure being present, but their setting is indicative of better-supported higher education systems than those that tend to be common in Sindh. The qualitative theme of digital confidence in the current research provided a much-needed correction to the quantitative trend by demonstrating that learners might be digitally linked yet lacking confidence in academic applications. This observation is consistent with Alwadood et al. (2023), who discovered that the attitude of students towards hybrid learning is generally ambivalent, contingent on the convenience and challenge.

It is also found that flexibility and convenience were the most valued aspects of hybrid learning. Flexibility had the best mean score according to

the dataset, but the interviews affirmed that students found hybrid learning to be helpful due to less physical travel, increased access to resources, and continuity when face-to-face access was challenging. This confirms the OECD (2021) opinion that the post-pandemic flexible learning models have become a significant component of higher education. It is also indicative of the UNESCO International Bureau of Education (2023b) perspective, which outlines hybrid education as an access-widening methodology and flexibility. Nonetheless, the results of the interview also reveal that flexibility was not perceived as something positive by default. Respondents kept on associating flexibility with the necessity of structure, surveillance and academic sobriety. This more sceptical stance helps McCarthy and Palmer (2023) claim that blended learning can only be effective when course design, expectations, and support systems are coherent. The current evidence thus implies that flexibility is a true virtue of hybrid learning, but only when it is managed with the help of a good pedagogic organisation.

One more significant aspect is associated with the proximity between preparedness and engagement. Even though the survey results revealed moderate positive readiness scores in general, the involvement in hybrid classes was relatively lower, with a lower mean as compared to other readiness measures. This distinction is important in that it indicates that students might be technically in a position to take part in hybrid learning but not equally willing and able to contribute to it. This interpretation got the strongest support in this interview data, since some participants described that it is common that because students are online, they tend to stay silent, hesitant and passive. This result is in line with Islam et al. (2022), who believe that student-centred blended learning requires active participation instead of passive access to resources. It further reinforces Gudoniene et al. (2025), who demonstrate that participation, interaction and ongoing engagement among students tend to be problematic with hybrid teaching in higher education. The current research thus points out one of the most evident

fault lines of hybrid preparedness in the Sindhi context to be on participation.

Care must also be taken to interpret the findings on opportunities. Numerical results indicated that students identified that hybrid learning was advantageous in terms of access to resources as well as training in self-sufficient and online learning. This is partly supported by the qualitative results that revealed that students enjoyed recorded lectures, notes and the convenience of simultaneous online and physical modes. This finding coincides with the works by Bouilheres et al. (2020), who believe that hybrid learning would enhance the learning experience through the expansion of resource access and the provision of other modes of study. It also corresponds to the statement by Rahmatulloh and Napis (2023), who state that flexibility and the expansion of digital literacy qualities are significant advantages of hybrid higher education. The qualitative themes indicate, however, that students realised such opportunities with a practical rather than an idealised sense. They found hybrid learning helpful as it enabled them to overcome the actual limitations, rather than due to the possibility that they thought it had revolutionised education, and that such a revolution was universally good. This is a vital difference since it will avoid an excessive interpretation of the data.

The findings of the challenge are also eye-opening. To the surprise of the survey findings, technical problems were not as serious as they might have been, as they had a mean of 2.80, whereas difficulty paying attention generated a middle-range mean of 3.20. On the face of it, this can be taken to indicate that there were qualifying obstacles to the infrastructure, though not overriding. Nonetheless, the results of the interview make that kind of interpretation tricky. Concentration issues, poor interaction, platform confusion, and frustration when technologies do not work as well were some of the problems that participants mentioned as a huge barrier to meaningful interaction. It shows that the effects of a problem can be educationally severe despite seeming to be medium in descriptive statistics. This trend is consistent with the findings of Kanwal et al. (2023), who discovered that the

challenges of blended learning are deemed to be motivation, adjustment, and engagement-related, not necessarily device-related. It also indicates the cautious note by the Global Education Monitoring Report Team (2023) that the value of technology to education is not determined by whether it is available, but rather according to the way it is experienced and allocated. The current results then indicate that challenges of hybrid learning in Sindh are not only infrastructural, but pedagogic and behavioural.

These results are particularly relevant to the Sindh context. Research in larger global contexts typically presumes comparatively resilient digital infrastructures or enhanced institutional frameworks, which tend to simplify the hybrid learning design compared to situations with even less balanced resource views. Naveeda and Wajahat (2024) demonstrate that in Pakistan, the use of technology in learning among students is influenced by barriers like a lack of connectivity, imbalanced learning conditions, and inadequate support. The current paper confirms the general orientation, yet it offers a more precise observation that, despite students' fair access reports and high level of access, the conversion of access into active and meaningful involvement is the underlying problem in the institution. This is where the present results transcend mere technology interpretation and demonstrate that hybrid learning should be construed through the prism of the lived experience of students instead of the mode of delivery per se.

In general, both quantitative and qualitative results are complementary. The survey findings offer a general image of moderate preparedness, high awareness of the flexibility, and less than overwhelming but actual challenges. The themes in the interview enrich that image by demonstrating that preparedness was uneven, flexibility necessitated organisation, and involvement was undermined by a lack of confidence, distraction, and support. In this regard, the research does not confirm the existence of a purely positive perception of hybrid learning, but neither does it argue in

favour of a completely negative conception in this matter. Rather, it implies that the hybrid learning in the University of Sindh, Faculty of Education, is practical and conditional. This finding aligns with those of Álvarez-Chaves and Saborio-Taylor (2025), who state that the effectiveness of hybrid learning hinges on the quality of its implementation, and with Masalimova et al. (2024), who demonstrate that attitudes towards digitally supported learning after the pandemic are mixed, not necessarily all positive.

CONCLUSION

The researchers discovered that the readiness of the students in the Faculty of Education, University of Sindh, showed a moderate to positive indicator of preparedness for hybrid learning. The quantitative results were fairly strong in terms of availability of the devices, flexibility and a belief in the use of the digital tools, and the qualitative results provided that readiness was not full and relied on confidence, adjustment, and engagement. Flexibility in learning, easier access to materials, and the development of the digital and independent learning processes were considered as the main opportunities. Nevertheless, significant issues persisted, especially the lack of concentration in online classes, weaker and less interactive interactions, uneven participation, and a lack of academic support. This is because, on the whole, the research findings indicate that hybrid learning is feasible, as well as helpful, in the specified case, but only in the conditions of a proper level of technological and pedagogical support for students.

Some of the suggestions include that the university should implement both student and teacher orientations and training on how they should interact in a hybrid learning environment. Enhancement of LMS functionality, internet access and technical support should also be assigned a greater institutional attention in order to allow students to attend more regularly. Clear rules on attendance, interaction, and online participation are to be developed to ensure seriousness in academics both in physical and online environments. More so, the digital inclusion measures must be enhanced to assist

students who might lack equal access to or confidence.

References

- OECD. (2021). The state of higher education: One year into the COVID-19 pandemic. Available at: https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/07/the-state-of-higher-education_19184d52/83c41957-en.pdf
- UNESCO International Bureau of Education. (2023). Hybrid education, learning, and assessment: A reader: An overview of frameworks, issues and developments in light of COVID-19 and the way forward. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000387639>
- UNESCO International Bureau of Education. (2023). Policies to promote hybrid education. Available at: https://unesdoc.unesco.org/ark:/48223/pf0000386999_eng
- Global Education Monitoring Report Team. (2023). Global education monitoring report 2023: Technology in education: A tool on whose terms? Paris: UNESCO. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000385723>
- Bouilheres, F., Le, L. T. V. H., McDonald, S., Nkhoma, C., & Jandug-Montera, L. (2020). Defining student learning experience through blended learning. *Education and Information Technologies*, 25(4), 3049-3069.
- Prifti, R. (2022). Self-efficacy and student satisfaction in the context of blended learning courses. *Open Learning: The Journal of Open, Distance and e-Learning*, 37(2), 111-125.
- McCarthy, S., & Palmer, E. (2023). Defining an effective approach to blended learning in higher education: A systematic review. *Australasian Journal of Educational Technology*, 39(2), 98-114.
- Alwadood, Z., Ab Halim, S., Bakar, S. A., & Noor, N. M. (2023). Assessing student perceptions on hybrid learning. *Int J Eval & Res Educ* ISSN, 2252(8822), 1583.
- Ali, A., Khan, R. M. I., & Alouraini, A. (2023). A comparative study on the impact of online and blended learning. *Sage Open*, 13(1), 21582440231154417.
- Rahmatulloh, & Napis. (2023). Opportunities and challenges of hybrid learning in higher education in terms of student's digital literacy capabilities. *Jurnal Penelitian Pendidikan IPA*, 9(12), 11582–11591.
- Kanwal, A., Zahid, A., & Afzal, A. (2023). Investigating the benefits and challenges of blended learning approaches at the university level. *Qlantic Journal of Social Sciences and Humanities*, 4(3), 76-89.
- Masalimova, A. R., Zheltukhina, M. R., Sergeeva, O. V., Sizova, Z. M., Novikov, P. N., & Sadykova, A. R. (2024). Exploring higher education students' attitudes toward e-learning after COVID-19. *Contemporary Educational Technology*, 16(1), ep488.
- Naveeda, & Wajahat, S. (2024). E-learning experiences of students in Pakistan during COVID-19: Barriers and perceptions. *E-Learning and Digital Media*, 21(1), 1-23.
- Istenič, A. (2024). Blended learning in higher education: The integrated and distributed model and a thematic analysis. *Discover Education*, 3(1), 165.
- Gudoniene, D., Staneviciene, E., Huet, I., Dickel, J., Dieng, D., Degroote, J., Rocio, V., Butkiene, R. & Casanova, D. (2025). Hybrid teaching and learning in higher education: A systematic literature review. *Sustainability*, 17(2), p.756.
- Álvarez-Chaves, A., & Saborío-Taylor, S. (2025). Hybrid learning in higher

education: Considerations for its implementation in course design. *Journal of Digital Educational Technology*, 5(1), Article ep2505.

- Breitschwerdt, L., Hümmer, C., & Egetenmeyer, R. (2025). Online and on-site participation in synchronous hybrid settings: reasons from the perspective of higher education students. *Higher Education*, 1-22.
- Wakenshaw, S., Agg, C., & Yang, L. (2024). Students' readiness for blended learning in UK higher education. In *UK and Ireland Engineering Education Research Network Conference Proceedings 2023*.
- Assefa, Y., Gebremeskel, M. M., Tilwani, S. A., Moges, B. T., & Azmera, Y. A. (2024). The structural relationships between students' field of study choice, learning readiness and academic competence in higher education: the mediating role of student engagement. *Journal of Applied Research in Higher Education*, 16(5), 1627-1641.
- Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-learning and Digital Media*, 19(1), 36-54.