

Bridging the Divide: Turning Hybrid Learning Challenges into Strategic Opportunities for Public Universities

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ABSTRACT

Hybrid learning in higher education has been swiftly adopted, globally due to pandemic and other major disruptions. Since hybrid models promise benefits like greater flexibility for students, increased access to education (via distance), and new ways of teaching, the research evidence from universities that have the resources to implement these models cannot be directly applied to public universities in low and middle-income countries. This qualitative study explored the challenges faced as well as the opportunities offered to students learning via hybrid delivery methods at public universities in Narowal district, Pakistan. This district is primarily an agricultural community on the outskirts of a city without much digital infrastructure or resources. Data was collected through focus group discussions (FGDs), with 5 to 8 participants per FGD (approximately 18 to 24 total), who were enrolled in public colleges and affiliated with the University of Punjab. Eight main themes emerged: Infrastructural barriers (e.g., poor internet connectivity, lack of appropriate devices, irregular access to electricity); Pedagogical Challenges (e.g., passive learning; unclear content; lack of adequate feedback); Student Engagement & Self-Regulated Learning (e.g., procrastination; home distractions; informal peer support); Socioeconomic Constraints (e.g., high cost of data; responsibilities to family members; barriers due to gender); Institutional/Administrative Issues (e.g., untrained faculty; rigid attendance; lack of technical support); Perceived Opportunity (e.g., flexibility; ability to watch recorded lectures; development of skills needed to work with technology); Coping Strategies (e.g., creating informal study groups; downloading materials during night time; peer assistance); The results of this investigation suggest that hybrid learning as defined today is more likely to dilute than transform pedagogy and that the infrastructure limitations faced by students greatly impede their ability for demonstrated cognitive, social and teaching presences. While students create resilience via informal networks and creative solutions each day, their efforts will not provide a substitute for the systemic support of an institution. The study will offer contextually grounded data from an under-represented context, thus calling into question the dependence on technology and confirming that when hybrid learning is used without thoughtful or redistributive policy, it may also heighten educational inequities that existed prior to the introduction of hybrid learning. Analysis of themes within the students' voice illustrate the duality of opportunity and barriers that exist for them in this environment.

Keywords: Hybrid learning, blended learning, public universities, higher education, digital divide, thematic analysis, Narowal, Pakistan, qualitative research, student perspectives

INTRODUCTION

Higher education has changed dramatically and deeply over the last ten years, with unprecedented growth (accelerated dramatically since the early 2020s by global disruptions). One of the biggest changes in all of education has been the increasing number of institutions and educators using hybrid learning. Hybrid learning is defined as a type of pedagogy that combines in-person classroom

instruction with online digital components. Hybrid learning is different from traditional (face-to-face) and fully online (distance) classroom environments. Whereas traditional modes of instruction are personal, immediate and social; and fully online delivery systems are flexible, accessible and contain an abundance of multimedia lecture content; hybrid learning uses both modalities to create the best instructional environment – combining the advantages of both the face-to-face classroom experience as well as the flexibility and quality of the electronic classroom experience (Garrison & Vaughan, 2013).

For public universities and colleges, which include most of the world's developing countries and are responsible for providing affordable, equitable and accessible opportunities for students to pursue higher education, the transition to hybrid learning will be both a major and complex technological upgrade, but also represent a major social and institutional challenge. Most public universities and colleges typically have very limited resources available to them, have very diverse student bodies that include many economically disadvantaged individuals, and operate within government bureaucracies that are typically resistant to rapid social change (Altbach, 2016; Habib, et al, 2024). Consequently, while hybrid learning strategies provide promise in terms of providing more opportunities for access and improving student academic achievement, implementing hybrid learning will require extensive research designed specifically to address the unique issues faced by public universities and colleges.

The theoretical potential of hybrid education is impressive. Supporters claim that because hybrid model reduces the need to physically attend school five days per week, it can decrease transportation costs, serve families with child care and job obligations, and lessen the impact of overcrowded classes a timeless problem in many public universities across South Asia, Africa, and Latin America (Means, Bakia, Murphy, 2014) – while also providing flexibility through asynchronous elements like recorded lectures and discussion groups that allow students to assimilate the material at their own pace, thus accommodating various types of learners and educational backgrounds. On the institutional side, hybrid education creates opportunities for more efficient use of physical resources: e.g., class rooms can be scheduled more efficiently, and instructor resources can be utilized across multiple cohorts at the same time (Boelens, De Wever, Voet, 2017). In an age where public funding of higher education is stagnant or decreasing, effective use of resources is no longer simply desirable; it is essential.

However, the empirical evidence relative to hybrid education at public universities in particular in low and middle income countries paints a very different picture than the theoretical potential. There has recently been an increasing number of studies that highlight the prevalence of digital divides that disproportionately impact those from rural areas, low-income households, and under-resourced school systems (Hilburg, 2020; Van Dijk, 2020). Reliable, high-speed internet, functioning devices, and steady electricity are not assumed everywhere. Many students rely on mobile phones with limited data plans, making it practically impossible for them to participate in synchronous video sessions or in interactive online activities. (Mtebe & Raisamo, 2014; Javed et al., 2024.) This digital divide only replicates current gaps in access to education but, in many cases, creates greater gaps in access and turns hybrid learning from an inclusive innovation to a means of exclusion.

In addition to infrastructure problems, there are also pedagogical issues that need to be addressed. With the growth of hybrid delivery models, faculty must rethink their teaching practice; they now have to shift from lecture-centric teaching to facilitating active learning in two separate places at the same time. Many university faculty members, especially at public institutions with heavy teaching loads and no opportunities for professional development, do not have the educational background or continuing support they need to develop effective hybrid courses (Porter et al., 2014). Without adequate course redesign, hybrid courses often fall into what has been called the "course-and-a-half" issue: students come to campus for what has been the normal number of class meetings and complete additional course components online, creating a higher level of workload for the student but with no corresponding pedagogical improvement (McGee & Reis, 2012; Ahmad et al., 2023). Additionally, there is widespread faculty resistance. This stems from fears related to their ability to integrate technology into their teaching, questions surrounding academic integrity associated with online evaluation, and a real fear of

using hybrid instructional delivery to support pressure to reduce full-time tenure-track faculty (Johnson, 2016; Ahmad, et al, 2024).

But this sense of separation between students creates educational barriers to student engagement in hybrid/online courses by disrupting the informal social networks that help support student persistence—spontaneous study groups; casual conversation with peers outside of the classroom; and the informal social accountabilities created by being regularly present in the same physical space with classmates. There is ample evidence demonstrating that hybrid/online students, particularly those that are first-generation college students as well as those with low levels of self-regulated academic skills, experience higher levels of procrastination, disengagement, and attrition as compared to their peers that are enrolled in traditional instructional delivery systems (Xu & Jaggars, 2014; Khan, et al., 2015).

Thus, for public institutions of higher education that serve populations of primarily first-generation college students and low levels of self-regulated academic skills, this is not just a peripheral issue, but a very real primary issue. The very students who could experience the most significant benefit from the flexibility offered by hybrid learning may in fact be the very students who are least prepared to successfully meet the independent demands of hybrid learning.

Objectives

Objectives of the study are as follows;

1. To Explore the main challenges that students and faculty refer to as obstacles when using hybrid approaches to learn within public universities in Narowal (such as Infrastructure, teaching methods, social culture and institutional structures).
2. To Identify the new possibilities presented through hybrid approaches to facilitate increasing the access/engagement/achievement of both students & instructors.
3. To Investigate the techniques & adaptations utilized by students/instructors to address challenges and maximize the advantages of using hybrid methods to learn in low-resource environments.
4. To Create context-sensitive recommendations for decision makers at a policy level, university administrators, and all educators related to supporting equitable hybrid-learning models in public university settings with similar characteristics.

REVIEW OF LITERATURE

Conceptually, hybrid or blended learning models rely on many theoretical foundations, such as constructivism, connectivism, and communities of inquiry. In essence, hybrid learning is defined as the intentional combination of face-to-face and online learning experiences. This combination is designed to leverage the strengths of each type of learning, rather than simply adding a digital component to an existing traditional course (Garrison & Kanuka, 2004; Khan, et al, 2024). This integrative definition of hybrid learning is significant because, when implemented superficially with online components only serving as adjuncts or repositories of course materials, the hybrid learning model can be unable to achieve its full pedagogical potential. Graham (2006) describes the unit of analysis for effective hybrid learning to be the reallocation of time and space used in the course, allowing for deeper connections to the course material, peers, and instructors. The CoI Framework developed by Garrison, Anderson, and Archer (2000) has had a significant impact on the design of hybrid courses. Within the CoI framework, learners will have a meaningful educational experience when there is an intersection of three types of presence - cognitive presence (the degree to which the learner constructs and confirms meaning), social presence (the ability of the learner to create a social and emotional presence), and teaching presence (the design, facilitation, and direction of both the cognitive and social processes).

Many research studies around the world have focused on hybrid learning from different types of institutions. Many high-income countries have been found to have positive outcomes with their hybrid institutions as well, including, but not limited to, increased student satisfaction, flexibility, and equivalent or superior learning outcomes compared to traditional methods (Means et al., 2010). A meta-analysis published by Bernard et al. (2014) reported blended (hybrid) learning produced slightly better learning outcomes than both fully-online methods and fully face-to-face methods but with very different effect sizes based on the way in which the instructor designs their curriculum and the learner characteristics, as reported from studies at universities in North America and Europe who have imposed stable technical infrastructure, small class size, and an adequate amount of institutional support for faculty development (Bliuc et al., 2007; Khan et al., 2024). Many scholars have expressed concern regarding the referability of the findings of hybrid institutions based on the fact that most of the research is situated in high-income countries and has generally been conducted at universities with the necessary resources in order to properly support the institution's learners and faculty as there is still a significant number of institutions located in low-income countries worldwide with little to no access to technical resources (Olakulehin & Ojo, 2014).

On the other hand, many studies from both Sub-Saharan African and South Asian countries have consistently cited the digital divide as a major barrier to the growth of hybrid learning; for example, Unwin (2017) stated that there are still many universities located on the continent of Africa that have fewer than 30% of their learners with reliable broadband internet access, while those who have access have to rely on mobile data plans, which are unable to support video heavy use.

One challenge in the hybrid-learning literature is lack of infrastructure. There are many different aspects of infrastructure including hardware, internet connection, electricity reliability, technical support, and maintenance systems. Boelens, De Wever, and Voet (2017) conducted a comprehensive review of the challenges associated with hybrid learning and categorized them into four main challenges which are (1) how to provide students with flexibility; (2) how to foster student interaction; (3) how to support learning processes; and (4) how to address the digital divide. This last challenge, identified as the digital divide, was originally described by van Dijk (2005) as a lack of equal access to information/communication technology and is now recognized as multi-faceted. The digital divide occurs in three main areas. The first area of the digital divide is the physical aspects of the divide — the researchers discuss the need for access to technology and connectivity (e.g., laptops/computers with internet access). The second area of the digital divide is the skill and competence areas (e.g., using computers and internet resources) to utilize technology in order to enhance learning. The third area of the digital divide is the outcome and benefit areas related to technology usage (Van Deursen & van Dijk, 2019). Public universities that serve marginalised students are often faced with all three levels of digital exclusion, as students experience digital exclusion at each level of the digital divide simultaneously. Mtebe and Raisamo (2014) conducted a study on several universities in Tanzania and found that more than 60% of the students were able to access course materials solely through mobile devices that had small screens and limited computing capabilities. Because of this, the interactive functionality of learning management systems was unavailable to most of these students. Another significant hurdle is ensuring faculty readiness and securing institutional support. According to Porter et al. (2014) in their survey of faculty across numerous institutions of higher learning, it was found that successful implementation of hybrid requires more than training in technology and continuous assignment of mentors for pedagogical support; it also necessitates reassignment of time for redesigning courses that contain hybrid elements and recognition of hybrid teaching in the criteria for promotion and tenure. Absent these types of support, instructors tend to use traditional teaching practices in hybrid courses by “laminating” (Oliver & Trigwell, 2005) the components of hybrid courses on to unchanged face-to-face instruction without any meaningful integration. Instructors often resist this paradigm due to legitimate reasons, including anxiety about an increase in workload, loss of control of the learning environment, and perceived diminishing value of their own teaching expertise as a result of technology-driven reforms (Baran, Correia & Thompson, 2011); and public universities' faculty often express concern about academic integrity regarding online exams; for example, when tools for detecting plagiarism are either nonexistent or cost prohibitive (Watson & Sottile, 2010).

Students' self-regulatory skills must be strong in order for them to be successful transitioning to hybrid learning. Self-regulated learning is the capacity of students to determine their goals, track their progress, manage their time and adjust their strategies based on goals/progress, and it is critical for success in learning where there is not continuous supervision from an instructor (Zimmerman, 2002; Khan, et al., 2025). According to multiple studies, students who have less than adequate academic preparation (young students, first-generation university students, etc.) find it difficult to self-regulate in a hybrid learning environment (Broadbent & Poon, 2015). There is also evidence that students with lower prior academic achievement perform significantly worse in online and hybrid courses than in traditional face-to-face courses (Xu & Jaggars, 2014). This difference cannot be explained by demographic characteristics. The authors suggest that this is due to the fact that there are many more metacognitive demands placed on students to regulate themselves effectively when transitioning across numerous learning modalities with no daily classroom structure to support them. In another qualitative study, students reported experiencing confusion related to course expectations, feeling disconnected from classmates, and not allotting enough time for the online versus the in-class component of their hybrid course (Ellis, Ginns, & Piggott, 2009).

When it comes to institutional challenges, traditional curriculum and assessment formats, along with standardized schedules, make collaborative teaching models difficult to implement in higher education institutions. For example, many public universities in South Asia have rigid semester lengths, course content guidelines, and methods of assessment that are determined by the university or government regulatory body of affiliation, making it impossible for the teacher to rethink and redesign their course according to hybrid principles (Shah & Siddiqui, 2019). In addition to these issues related to course redesign, public university infrastructure also restricts the use of collaborative teaching models, with large lecture halls built to accommodate 100s of students, only a few spaces for small group meetings, and not enough power and plug-in locations for student personal technological devices (Oblinger, 2006; Khan & al., 2011). Furthermore, institutional policies regarding intellectual property, data privacy and providing accommodations for students with disabilities are sometimes slower to develop than new technologies, leaving your faculty without clear legal and ethical guidelines to assist them in developing collaborative hybrid approaches (Reiser & Dempsey, 2017).

Although there are certainly many challenges that come from implementing hybrid learning, there is also a wealth of literature providing evidence of opportunities created through hybrid learning. The most obvious opportunity presented by hybrid learning is the increased flexibility and accessibility of distance education. Students can attend school regardless of where they live, no longer have to work around the traditional academic calendar, and have fewer out-of-pocket costs associated with getting to campus based on family or job obligations (Allen and Seaman, 2013; Khan, et al., 2025). Additionally, for public institutions that have limited capacity to expand physical spaces on their campuses, hybrid learning opens the door for increased enrollment without the need to build more classrooms. In a longitudinal study evaluating the effectiveness of a blended learning program at a large, 4-year public university in Turkey, Aydin (2015) reported that students participating in blended courses had higher retention rates, were more satisfied with their work-life balance, and generally had better overall experiences than students participating solely in traditional face-to-face courses.

A second opportunity created by hybrid learning is the ability to innovate pedagogically. One of the best-known hybrid models is the flipped classroom model, which allows students to first engage with material through online lectures and then work together in person to solve problems and discuss what they learned. Bishop and Verleger (2013) conducted a meta-analysis of 24 studies of flipped classrooms and found that while students had mixed feelings about the flipped model, overall learning outcomes were generally positive, especially when there was careful alignment between the pre-class material and the in-class activities. A flipped-classroom approach is especially beneficial in situations where students don't have much time to meet face to face and will allow greater use of active learning during synchronous (virtual) class time. In addition, because many hybrid and online courses include asynchronous (independent) components, students can repeatedly return to concepts they find difficult, pause and rewind instructions, and engage with the material at their own pace this is especially

important for students who have limited prior preparation or who have disabilities (Rose & Meyer, 2002).

Another possibility relates to using data to improve instruction. Learning management systems will automatically create detailed data on how engaged a student was with different parts of the course by tracking the amount of time the student spent on assignments, discussing in online discussions, completing low-stakes assessments, etc. This type of data can be used to identify at-risk students early, and assist them in having timely interventions to stay on track (Siemens & Long, 2011). Arnold and Pistilli (2012) have documented that when predictive analytics were used at Purdue University to identify high-risk students, the number of students who withdrew from courses decreased by over 20%. For many under-resourced public universities where student support services are frequently under-resourced, such data-driven approaches may provide a scalable opportunity for intensive one-on-one advising to assist at-risk students.

There is not much research available about hybrid learning in Pakistan, but it is increasing quickly as a result of the COVID-19 pandemic and the new policies established by the HEC. Public universities in Pakistan have also been very traditional in their methods of teaching and incorporating digital technology into their classroom setup for many years. According to the HEC's baseline survey (2018), while 85% of public universities have learning management systems available for use, only around 30% of faculty members have ever actually used one for teaching purposes. Students also have limited access to these systems because most of the use is concentrated at urban campuses. There are great differences in the level of technology infrastructure available at universities located throughout the various provinces (Raza, 2019).

Most of the research studies completed to date have focused on hybrid learning in urban institutions within the country. One example is the survey conducted by Rafique and Ameen (2020) of students at a public university in Lahore, where they reported mixed feelings about their experiences participating in hybrid learning courses. While many students indicated they liked being able to access recorded lectures and turn in assignments online as a convenient service, they were frustrated by having unreliable internet connections, high data costs, and an overall lack of face-to-face interaction with their instructors.

METHODOLOGY

This study employed a qualitative research design. Data were collected through three Focus Group Discussions (FGDs) conducted in Narowal, Pakistan. Each FGD consisted of 5–8 participants, for a total of approximately 18–24 respondents. Participants were students enrolled in public universities/degree colleges in the Narowal District. FGDs were audio-recorded, transcribed, and translated from Urdu/Punjabi to English.

Thematic analysis

Theme	Sub-theme	Response
1. Infrastructural Barriers	1.1 Unreliable internet connectivity	"Most of the time, the internet drops during live classes. We sit in the sun outside trying to catch a signal."
	1.2 No personal devices	"In my family, seven people share one mobile phone. I

		cannot attend when others need it."
	1.3 Inconsistent electrical power supply	"Load shedding is unpredictable. By the time power returns, the lecture is over."
2. Pedagogical Issues	2.1 Passive learning experience	"Teachers just upload slides and do not explain. It feels like self-study, not a class."
	2.2 Difficulty understanding content	"Without face-to-face discussion, many concepts remain unclear. We hesitate to type questions."
	2.3 Instructors do not give enough feedback	"Assignments are submitted online, but we never receive comments or corrections."
3. Student Engagement and Self-Regulation	3.1 Procrastination and time management	"I tell myself I will watch the recorded lecture later, but later never comes."
	3.2 Distractions at home	"At home, there is noise, younger siblings, household work. It is impossible to focus."
	3.3 Peer assistance through informal networks	"We created a WhatsApp group ourselves. There we share notes and help each other."
4. Barriers Related to Socio-Economic Status	4.1 Mobile data cost too high	"A single lecture video consumes my whole week's data package. I cannot afford more."
	4.2 Family responsibilities conflicting with schedule	"I have to work in the fields during the morning. Hybrid classes are often at that time."
	4.3 Barriers due to gender	"Female students cannot easily go to campus for face-to-face sessions, but online access is also difficult without personal devices."
5. Institutional and Administrative Issues	5.1 No instructor training	"Our teachers were suddenly told to teach online, but no one

		trained them. They struggle as much as we do."
	5.2 Rigid attendance requirements	"We are marked absent even if the internet failed through no fault of ours."
	5.3 Inadequate technical support	"There is no helpline. When the learning management system stops working, we just wait."
6. Perceived Opportunities	6.1 Flexibility for commuting students	"I save three hours of travel on days when only online session is held. That time I can study."
	6.2 Access to recorded lectures	"The best part is recording. If I did not understand once, I can replay the teacher's explanation."
	6.3 Development of digital skills	"Slowly, I have learned to search for resources, upload files, and use online tools. These are new skills."
7. Coping Strategies	7.1 Forming informal study groups	"We meet at a friend's house who has internet. Together we attend the session on one phone."
	7.2 Downloading materials at night	"I download videos after midnight when data prices are lower and electricity is more stable."
	7.3 Getting help from peers with more resources	"There is one student in our group whose family has a laptop. He shares notes with all of us."
8. Participant Suggested Improvements	8.1 Provide campus Wi-Fi and computer lab	"University should open computer labs for longer hours. Even basic desktops would help."
	8.2 Use light, text-only alternatives to online video.	"Short text summaries and audio notes would be easier than long videos on slow connections."

Interpretation of Thematic Analysis

Infrastructural barriers are a major challenge faced by learners participating in hybrid learning. Across the three FGDs, participants have indicated that their inability to participate fully in their education experience is caused by inadequate internet access, insufficient access to personal devices and unreliable access to electricity. These barriers also have a cascading impact; for example, a learner who has no personal device will be unable to attend one session; in fact, due to not being able to access recorded lectures, submit assignments or communicate with instructors this absence will accumulate resulting in progressive disengagement from their academic studies over time. The quote “sitting outside in the sun trying to get a signal” strongly articulates the physical nature of digital exclusion. Unlike their peers who study in higher-resourced urban universities, the learners studying in Narowal cannot take for granted that the infrastructure will function properly. This raises questions about the assumption held by many authors in the hybrid learning literature, particularly from higher income countries, that there will always be connectivity.

Additionally, the relationship between infrastructure barriers and socio-economic constraint are indeed very close. Students spoke of sharing one cellular phone with seven family members and reported that high costs associated with data are barriers to their participation in hybrid learning activities. These issues are interrelated; they are simply different sides of the same poverty coin.

Pedagogical challenges emerged as a key theme, which described how hybrid approaches had changed the way students experienced and were instructed in their courses. Students consistently described their hybrid learning experience in passive ways (“Teachers just put slides up”), indicating that they were unable to understand course material without being able to discuss it face-to-face. The student who described their class as “self-study rather than a class” would suggest that a class is defined not only by transmitting the knowledge of instructors to students but also through an interactive, dialogic process of co-constructing understanding together. When the dialogic process is missing, then the process of co-creating understanding becomes a leaner version of an educational experience in which the student is solely responsible for generating and creating meaning without any of the scaffolding provided by a skilled instructor and peer interaction.

Equally troubling is the issue of inadequate feedback on assessments. Students indicated that they submitted their assignments electronically but did not receive any comments or corrections on those assignments. This is indicative of a systems failure occurring within a formative assessment process that is critical to learning. Without receiving feedback, students are completing assigned work as a performative outcome (i.e. for a grade) versus as a developmental outcome (i.e. for future growth). The failure to provide feedback on assignment submissions also relates back to instructor overload (Theme 5), as many of the hybrid type instructors are struggling to move to new instructional modalities without adequate institutional support.

Theme three provides evidence of the internal psychological aspects of hybrid learning that instructors and administrators may have difficulty seeing. Procrastination issues as well as time management issues were significant obstacles to learning. A student reflects this experience in the following quote: “I tell myself that I will watch the recorded lecture later, but later never seems to come.” This also illustrates the concept of delayed engagement with asynchronous learning materials. This phenomenon tends to affect those students who have weaker self-regulated learning skills very severely (Broadbent and Poon, 2015). When students are in a traditional classroom they have external structures that are provided by a fixed classroom schedule and by having co-present peers. These external structures are less evident in a hybrid model since the environment where students complete hybrid learning is loosened.

At the same time, theme three demonstrates how robust students can be. The creation of informal peer networks through WhatsApp indicates that students actively create alternative support systems when formal networks are not available. These informal peer networks provide multiple purposes; for example, they clarify difficult concepts, share notes, remind students of important deadlines and perhaps most important create a sense of collective accountability. A student reported that “we share notes and help each other,” showing that peer support partially compensates for the lack of immediacy of their

instructor. However, this form of support is inequitable; for example, a student who does not have access to a smartphone or to mobile data cannot participate in the informal peer network resulting in widened inequities amongst classmates.

It makes clear what is commonly not discussed regarding educational technology, it is how socio-economic status impacts the experience of hybrid education. For example, each focus group discussion (FGD) included conversations regarding the high cost of mobile data for those who need to use mobile devices to access online learning materials and as one participant mentioned; the average number of data from the use of one lecture video on her mobile device consumed her entire weeks worth of data. This forces students to make real, difficult choices regarding which lecture they will attend, which materials they will download and/or which materials they ultimately will not have the option of retrieving. Ultimately, as discussed by participants and from my observations, it leads to learning being fragmented. Additionally, when Narowal had an agricultural schedule that conflicted with hybrid schedules, this was evidenced by the male participants working in the fields during the early morning hours; making it impossible for them to attend the live hybrid simulation sessions scheduled at that time. This contradicts the belief that hybrid learning automatically allows for flexibility; as this raises the question regarding whose flexibility does hybrid learning provide? There are students with regular employment or responsibilities to family and thus will experience flexibility utilizing the asynchronous components of hybrid learning.

Gendered barriers, were also identified as subthemes. Both female students face a double bind of restrictions to their mobility based on cultural norms and traditional roles in their families, how household resources are allocated in regard to access to a device to obtain the educational resources and ultimately are unable to attend class (face-to-face or through online platforms) at a level consistent with their male counterparts. Therefore, females are less likely to participate in both face-to-face and/or online education than a male student.

The fifth theme moves from student level to institutional levels of influence. Participants reported that faculty were not trained in hybrid teaching, attendance policies were rigid and punitive, and there was a lack of technical support. The quote, “No one trained our teachers and they struggle as much as we do” is important because it represents empathy rather than blame. Students understand that the instructors are also victims of a poorly executed planning transition.

Rigidly applied attendance policies became a source of significant frustration for students because they were marked absent for an internet mishap outside of their control. This indicates a disconnect between the institution’s use of attendance as a usage count and actually creating conditions to facilitate learning (i.e., unreliable infrastructure). Lack of technical support, “there is no helpline - when the system crashes,” places students at a disadvantage when encountering technical difficulties. Well-resourced institutions have a helpdesk and IT resources to respond to their needs. Narowal’s public educational institutions do not offer that level of support to their students and faculty; therefore, the responsibility of troubleshooting rests entirely with students and their teachers.

The majority of participants expressed that there were challenges associated with hybrid programs, yet also expressed that the following opportunities were attached to hybrid programs: Reduced travel to campus because many hybrid program participants commute (over 1 hour in their commute) can be a big advantage. Participants overwhelmingly identify access to recorded lectures as another benefit of hybrid programs. The ability to go back into the recorded lecture and replay a lecture gives participants significant help in understanding the concepts presented that they may have missed during the live lecture. One participant was able to use the recorded lecture to go back and replay the teacher’s explanation, highlighting the effective pedagogical practices of asynchronous learning and how effective the implementation is when it is done right.

Another opportunity identified by participants was digital skill development as a result of necessity. Participants developed digital skills that can be transferred to work settings and used for the labour

market by learning how to search for information, upload files, and navigate online tools. Therefore, even when the hybrid program is poorly implemented, acquiring digital literacy has value. It is also important, however, to not romanticise this process. As the acquisition of skills by trial and error is not as equitable as acquiring skills from effective and structured instruction.

The seventh theme describes the ways students have found creative solutions to cope with hybrid learning challenges; for instance, students form informal study groups, download study materials (when data prices are cheaper and electricity is more reliable), and seek assistance from peers who are more well-off than they are in order to complete their homework. These strategies are very much an example of what could be called "everyday resilience." They are not part of any curriculum, but they are created collectively to meet a need.

The image of students visiting a friend's house to attend a session on one phone because the friend has access to the internet is impactful because it changes a solitary activity (going to class) into a collective activity, thus restoring a sense of being with others, which is missing when people are separated. However, this option will only be taken advantage of by students who have friends with better resources than they do. The most at-risk students—those with fewest friends/resources or most severe resource limitations—may be unable to benefit from this type of informal support.

The last theme as proposed solutions by their self-created participants. These recommendations clearly show thoughtfulness regarding both the practicality and specificity of their recommendations. Requests for campus Wi-Fi services along with more extended computer lab work hours would provide devices and connect enough for access directly. The demand for lightweight text-based materials created at video-influenced another level of understanding that video is not always appropriate; however, text/audio type materials will be most accessible in low-bandwidth situations. Flexible attendance policies along with the training of staff would bring these recommendations to completion.

An interesting observation about these recommendations is that none of them require large financial investments nor do they require high-end technology. Providing on-campus Wi-Fi, extended computer laboratory hours, providing text-based materials, creating flexible policy arrangements, and training faculty/staff could all be completed with existing resources available to public university budgets if budget priorities were improved. This leads to the conclusion that barriers to equity related to hybrid learning are not primarily related to technological difficulties, but rather institutional/political barriers.

DISCUSSION

Through the thematic analysis conducted on three focus groups with the students studying at Narowal's public universities, this research study provides rich-quality evidence of a nuanced understanding of the obstacles faced by the students in learning through hybrid forms in a resource-limited area. The Research found that unreliable internet access, unavailability of computers, and an inconsistent electricity supply were the most often cited barriers. This aligns with the growing body of literature identifying the ongoing existence of a digital divide amongst lower-income areas. In addition, this study extends that literature by identifying the cascading and cumulative impact of deficiencies in infrastructure.

In Van Dijk's (2020) conceptualization of the digital divide, he describes the divide at four different levels: motivation, physical, skills and use of technology. Students at Narowal experience all four levels of the digital divide at the same time; however, importantly, students' potential to demonstrate their skills and utilize the technologies that they are motivated to use is inhibited due to an inability to physically access technology (e.g., no device or electricity). This finding provides a new perspective to the assumption presented in various policies (World Bank, 2021) that providing devices alone will resolve the issue—e.g., because a person has a mobile phone that can be shared with family and has access to the internet, his/her options for using the device for meaningful learning may be constrained

due to the limitations of that device (e.g., small screen, limited battery, and competing demands for the device).

Other low and middle-income countries have reported very similar results. In their research on Tanzanian universities, Mtebe and Raisamo (2014) found that over 60% of the students used low-functioning mobile phones to access course materials. Similarly, Kumar and Kumari's (2019) research showed that rural Indian college students experienced "skill gaps" in their ability to use the learning management systems as well as the lack of stable internet access. The data from Narowal highlight another dimension to this issue: the unpredictable nature of connectivity over time. Students described their experiences of having access as inconsistent, sometimes connected with no warning and sometimes disconnected without warning. The unpredictability of connectivity is qualitatively different from a consistent lack of access; it fragments a student's attention, prevents planning, and undermines the sense of control that is needed for self-regulated learning (Broadbent & Poon, 2015; Khan, et al).

This research illustrates that the implementation of hybrid instruction in Narowal has produced outcomes in pedagogical dilution rather than pedagogical transformation. Participants reported that instructors did not provide meaningful explanation beyond simply uploading their slides; therefore, participants felt their experience was non-participatory and that there had been insufficient effort to create a "real class." This finding corresponds with the criticism made by Oliver & Trigwell (2005), who noted that many hybrid instruction practices merely serve as laminates (i.e., the addition of digital elements to traditional face-to-face instruction with no real integration). As a result of this form of hybrid instruction, according to Garrison and Vaughan (2013), hybrid instructional models do not realise their potential for transformation, and instead repeat or exacerbate the limitations of both the face-to-face delivery method and online delivery method.

The lack of meaningful and useful feedback—i.e., students submit their assignments but do not receive comments or corrections from their instructors—is particularly troubling. Hattie and Timperley (2007) indicate that feedback is one of the strongest influences on students' learning achievements, and when effective feedback is not present, students cannot accurately calibrate their levels of understanding, correct their errors, or develop their competence more deeply. The results from Narowal suggest that due to faculty overload and insufficient training (Porter, Graham, Spring, & Welch, 2014; Khan, et al, 2025; Khan, et al, 2025), the feedback loop becomes the first victim of the hybrid transition process.

Procrastination, time management and home distractions are common problems among students in today's hybrid learning model. As noted in previous studies, the increased responsibilities placed upon students in this type of education means these students will need to be more self-regulated than they would typically be if they were attending a traditional classroom. Zimmerman (2002) describes self-regulated learning as the ability (or skills) required to set goals, track progress, manage their time and adjust strategies. In a traditional classroom setting, a teacher provides structure to students via a fixed schedule, periodic reminders, and a consistent basis of social accountability. In hybrid environments, structure becomes a student responsibility, thereby requiring that students "establish" or "create" their own sense of structure and take on the additional responsibility that comes with the increased use of technology. Xu and Jaggars (2014) found that students who were less prepared academically performed significantly worse in both online and hybrid courses than they did in face-to-face courses, which can be attributed to their lack of self-regulation. Data collected during the Narowal Study confirm similar experiences among participants who indicated that they planned to view recorded lecture materials "later," but ultimately did not do so; rather they simply forgot.

On the other hand, participants in the present study also displayed an alternative form of resilience, which adds further complexity to our understanding of this phenomenon. Many of the participants formed informal groups (typically via WhatsApp) in which they were able to share notes and clarify concepts, as well as provide each other with social accountability. This finding is consistent with the research by Ellis, Ginns, and Piggott (2009), who cited the creation of informal peer networks among successful online learners as a means by which these successful learners compensating for less

instructor presence in their online learning experiences. However, a critical caveat exists with respect to such informal networks: they create inequities among and between students and other members of the cohort.

It would appear that the most pessimistic finding relates to the degree to which socio-economic constraints constrain all aspects of hybrid learning. Mobile data was not just inconvenient but the primary limitation (one video lecture consumed all of your data for a week). Also, students discussed how they had to decide which lectures to attend, which materials to download, and which ones not to download. There's no equivalent to rationed use of learning opportunities in traditional schooling; once a student reaches campus and attends class, there is no longer a cost on a per-session basis. Hilburg (2020) makes the observation that the digital transition in education shifts costs from institutions to students, and hence, presents a situation that works against low-income learners.

Family responsibilities, such as agriculture, add complexity for hybrid learners. Students in Narowal must frequently work in the fields in the mornings, which makes any live session scheduled during morning hours impossible. This finding serves as a challenge to the notion that hybrid learning automatically provides flexibility (Allen & Seaman, 2013). Flexibility is not an inherent outcome of the hybrid learning model; but rather, it is a factor of how it is designed. In instances where students' work patterns go unaccounted for when scheduling live sessions, hybrid learning can often have the same rigidity that exists within traditional schools.

The evidence provided suggests that universities have failed to create an environment conducive to hybrid learning because they lack the fundamental elements needed for hybrid courses. According to Porter, 2014, hybrid courses require three essential components: ongoing faculty development; adequate time away from instruction for administrators to redesign courses; and recognition as an important function by universities in their faculty promotion criteria. None of these three components exist at Narowal. The statement "no one trained our teachers. They are having as much difficulty as we are" is a strong statement of student empathy for faculty who have also experienced institutional failure.

The rigid attendance policies that penalize online students for situations beyond their control show what Boelens et al. (2017) identified as a gap between the institutional assessment system and the realities of learning. When attendance policies were created, attendance was determined solely by whether a student could be physically present. In a hybrid-learning environment, however, a student's ability to maintain a connection while learning is outside their control. Yet the attendance policies in place at Narowal have not been adjusted to reflect this new reality. The disconnect between the rules governing attendance and/or the realities of the learning process create issues of frustration as well as demotivation. Similarly, the lack of technical support ("no helpline when the system crashes") for students who are struggling with problems that they could not control and for which there is no resolution, creates further frustration and demotivation.

Participants identified genuine opportunities, despite an overwhelming focus on challenges. Participants universally valued recorded lectures, which allowed them to replay difficult content at their own pace and this aligns with literature supporting mastery-based learning and the advantages of asynchronous learning (Means et al, 2014). They also appreciated flexibility to reduce commuting times for long-distance students. These benefits are legitimate and should not be discounted.

Additionally, the coping strategies identified in this study—study groups; downloading material during the late evening when data charges are lower; seeking help from resourceful peers—illustrate what might be referred to as "everyday resilience." Students are not just passive individuals suffering from limited infrastructure; rather, they construct workarounds to achieve their academic goals. This finding calls into question deficit-oriented narratives that depict students within resource-constrained situations as being solely deficient. Students in these circumstances develop innovative digital strategies derived from their contextual exigencies; indeed, these strategies may exhibit more creativity and resourcefulness than those of more well-resourced students (Czerniewicz & Brown, 2014).

However, it should be cautioned against romanticising resilience. The fact that students must download their course materials between midnight and 6:00 AM, when data costs are at their lowest, demonstrates how the educational system has once again passed the costs and burden onto the students. This may not be an acceptable or appropriate alternative to an organisation's responsibility.

CONCLUSION

This research aimed to explore both the difficulties and possibilities that hybrid learning represents for public universities based in Narowal, Pakistan, from the perspective of students who are actually doing hybrid learning every day. The results obtained by means of thematic analysis of three focus groups demonstrated a complicated and frequently confused environment. On the one hand, there are major barriers faced by many students, such as the unreliability of internet access, which results in fragmented learning; lack of personal devices prevents some from participating; lack of reliable electricity often disrupts synchronous learning sessions; high data costs force many students to ration the educational material they obtain; and family obligations (especially those in rural areas where most families engage in agricultural work) and the gendered obligations associated with those family obligations often conflict with fixed scheduling for class times. As a pedagogical technique, hybrid learning often degenerates into merely sharing the same slides rather than changing the educational experience; therefore, many students have not received the type of feedback necessary to measure where they are at within their own learning process. There are also significant institutional barriers contributing to this/overall difficulty in hybrid learning, including untrained faculty; rigid policies that penalize students who have difficulty connecting to the internet during class; and complete lack of technical service/support for lack of student connectivity to the internet.

As it stands now, hybrid learning in Narowal fails to deliver on its promise to provide inclusive, flexible, high-quality education. Rather, hybrid learning recreates and often compounds existing inequalities. Students who were already disadvantaged in a traditional learning setting (i.e., low-income households, female students, have family responsibilities related to agriculture, do not own a personal device) now experience compounded disadvantages in hybrid learning environments. The digital divide in Narowal exists not as a binary of those who have access to the internet and those who do not. It exists on a continuum of limited, precarious, and inconsistent access. Even students who have smartphones are unable to afford the cost of mobile data; students who do have internet access struggle with connection reliability; and students who want to learn are hindered by infrastructure that is not in their control.

Moreover, it has been documented that there is a significant decline in pedagogical quality as a result of the implementation of hybrid learning without adequate preparatory training (for faculty), without redesigning courses for hybrid instruction, without technical support to facilitate hybrid instruction, and without altering the method of assessment. Rather than melding the best of both worlds, there is an intersection of the worst of both worlds: the social isolation and technical failures of online education combined with the inflexible, ordered, and passive nature (lecture-based) of traditional education. The collaborative, interactive, scaffolded approach to quality education is replaced by the solitary intake of uploaded slides.

This study presents a challenge to an idea called “technological determinism” — meaning that the introduction of technology will always improve education. The conclusion of this research is that technology alone is not a solution. Its effectiveness depends solely on how the technology has been implemented, what support is given (or not originally) to complement the use of the technology, and what design choices educators and administrators make in regards to the technology they implement. In the case of Narowal, the lack of support means the results of these technologies are poor and expected. In addition, the findings contribute to the Community of Inquiry framework by showing how lack of resources affects cognitive, social, and teaching presences concurrently. Therefore, the Community of Inquiry framework must be adapted for settings that have limited resources.

This research has provided evidence of how important qualitative, context-based research centered around student experiences is to obtaining accurate and complete data. The depth of the group interview data gathered (including specific challenges faced by students using technology in hybrid learning environments; the creative means that students use to meet their hybrid learning needs; and examples of students describing their attempts to get a signal by sitting outside, sharing one cell phone with seven family members, and watching recorded lectures at midnight) cannot be captured by traditional quantitative surveys. The voices of these students are significant because they demonstrate the effect that hybrid learning has on students and remind us of the purpose of education - to establish an environment where all students can learn and grow regardless of the variables or circumstances in which they find themselves.

This study results do not indicate that hybrid learning should not continue to be implemented in Narowal or similar locations. There are many positive impacts as measured by how much students are appreciative of using recorded lectures, less time spent in travel and the opportunity to gain some new digital/academic expertise. The study finds that hybrid learning currently being offered to Narowal's students fails to meet their needs. There is a very large gap between the promise of hybrid learning as stated by the policy makers and the actual experience of students attending Narowal Public University. Bridging this gap requires attention to more than technological solutions. There are also issues associated with faculty development efforts and institutional policies, as well as the socio-economic environment students live and learn in, both in terms of their home and university, which need to be addressed to sufficiently improve learning outcomes for students.

This study shows that hybrid learning at publicly funded universities in Narowal can have both positive and negative impacts on students. However, the benefits of hybrid learning for Narowal's students are being impacted by the social aspects of living and studying in a low income area that is rapidly becoming more and more inadequate due to lack of funding for education due to their social marginalization. As Narowal's students continue to express their frustrations with hybrid learning, those students need to be provided with support so they can continue to learn and successfully transition into post-secondary education or go onto post-graduate education and be able to demonstrate their ability to succeed within the current educational system.

REFERENCES

- Ahmed, A., & Khan, W. A. (2023). Gender dynamics and social change: Unraveling the threads. *Pakistan Journal of Law, Analysis and Wisdom*, 2(2), 1013-1020.
- Akyol, Z., & Garrison, D. R. (2011). Understanding cognitive presence in an online and blended community of inquiry: Assessing outcomes and processes. *British Journal of Educational Technology*, 42(2), 233-250.
- Ali, S., Khan, M., & Riaz, F. (2021). Faculty perceptions of blended learning in Pakistani public universities. *Pakistan Journal of Education*, 38(1), 45-68.
- Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Survey Research Group.
- Altbach, P. G. (2016). *Global perspectives on higher education*. Johns Hopkins University Press.
- Arnold, K. E., & Pistilli, M. D. (2012). Course signals at Purdue: Using learning analytics to increase student success. *Proceedings of the 2nd International Conference on Learning Analytics and Knowledge*, 267-270.
- Aydin, S. (2015). A blended learning model in higher education: Student retention and satisfaction. *Turkish Online Journal of Distance Education*, 16(2), 76-91.

- Baran, E., Correia, A. P., & Thompson, A. (2011). Transforming online teaching practice: Critical analysis of the literature on the roles and competencies of online teachers. *Distance Education*, 32(3), 421–439.
- Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International Society for Technology in Education.
- Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim, R. M., & Abrami, P. C. (2014). A meta-analysis of blended learning and technology use in higher education: From the general to the applied. *Journal of Computing in Higher Education*, 26(1), 87–122.
- Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. *ASEE Annual Conference & Exposition*, Atlanta, GA.
- Bliuc, A. M., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *The Internet and Higher Education*, 10(4), 231–244.
- Boelens, R., De Wever, B., & Voet, M. (2017). Four key challenges to the design of blended learning: A systematic literature review. *Educational Research Review*, 22, 1–18.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, 27, 1–13.
- Czerniewicz, L., & Brown, C. (2014). The habitus of digital ‘strangers’ in higher education. *British Journal of Educational Technology*, 45(1), 44–53.
- Ellis, R. A., Ginns, P., & Piggott, L. (2009). E-learning in higher education: Some key aspects and their relationship to approaches to study. *Higher Education Research & Development*, 28(3), 303–318.
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, 7(2), 95–105.
- Garrison, D. R., & Vaughan, N. D. (2013). *Blended learning in higher education: Framework, principles, and guidelines*. Jossey-Bass.
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87–105.
- Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3–21). Pfeiffer.
- Habib, A. R. ul, Khan, W. A., & Bibi, A. (2024). Empowering women: Navigating Islamic rights and cultural hurdles in Pakistan. *Al-Hameed*, 3(3), 1-16
- Habib, A. R. ul, Khan, W. A., & Shahzadi, N. (2024). Parenthood: Islamic teachings vs patriarchy's burden on Pakistani women. *Al-Mahdi Research Journal (MRJ)*, 5(5), 348-353.

- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81–112.
- Higher Education Commission of Pakistan. (2018). *Annual report 2017-18*. Higher Education Commission.
- Higher Education Commission of Pakistan. (2020). *Annual report 2019-20*. Higher Education Commission.
- Hilburg, J. (2020). The digital divide and higher education. *Journal of College Access*, 5(2), 12–24.
- Javed, Z., Hussain, K., & Khan, W. A. (2024). Navigating hostility: The educational impact of bullying upon gender variant students. *Journal of Social Research Development*, 5(2).
- Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., & Hall, C. (2016). *NMC horizon report: 2016 higher education edition*. The New Media Consortium.
- Khan, W. A. (2022). Transgender discrimination in the education sector: A case study of Pakistan. *Al-Haqeeqah: Research Journal for Social Sciences (Miscellaneous)*, 2(2), 39–43.
- Khan, W. A., Afzal, K., & Sheharyar. (2025). Social conformity and cultural integration: Non-Muslim students' behavioural adaptations during Ramadan. *Al-Aasar*, 2(2), 137-147.
- Khan, W. A., Afzal, K., & ul Habib, A. R. (2025). Beyond the purdah: Universities in Narowal as agents of socio-Islamic empowerment for women. *Contemporary Journal of Social Science Review (CJSSR)*, 3(2), 1782-1790.
- Khan, W. A., Ali, E., & Shahzadi, N. (2024). From faith to feelings: Media's grip on social, psychological, and religious growth of children. *INKISHAF*, 4(13), 43-58.
- Khan, W. A., Maqsood, F., & Ahmad, M. (2015). Socio-cultural constraints faced by working women in decision making regarding family affairs. *Journal of Asian Development Studies*, 4(3), 147-152.
- Khan, W. A., Nadeem, M. S., & Khalid, A. (2025). Dowry's silent strength: Holding marriages together, cutting polygamy down in Pakistani society. *Contemporary Journal of Social Science Review*, 3(1), 2331-2341.
- Khan, W. A., Nadeem, M. S., & Khalid, A. (2025). Socio-Islamic perspectives on gender equality: A case study of women, faith, and feminism at the University of Narowal. *Al-Qawārir*, 6(2), 14-25.

- Khan, W. A., Sheharyar, & Afzal, K. (2025). Psychological effects of religious guilt in Muslim communities. *Al-Aasar*, 2(1), 679-688.
- Khan, W. A., Sultana, S., & Rao, M. A. A. (2024). The impact of Muslim female educators on promoting gender equality in higher education. *Al-Mahdi Research Journal (MRJ)*, 5(3), 1201-1210.
- Kumar, V., & Kumari, A. (2019). Digital divide in Indian higher education: A study of rural-urban disparities. *Journal of Educational Technology & Society*, 22(4), 56-69.
- McGee, P., & Reis, A. (2012). Blended course design: A synthesis of best practices. *Journal of Asynchronous Learning Networks*, 16(4), 7-22.
- Means, B., Bakia, M., & Murphy, R. (2014). *Learning online: What research tells us about whether, when and how*. Routledge.
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. US Department of Education.
- Mtebe, J. S., & Raisamo, R. (2014). Challenges and instructors' intention to adopt and use open educational resources in higher education in Tanzania. *International Review of Research in Open and Distributed Learning*, 15(1), 249-271.
- Oblinger, D. G. (2006). *Learning spaces*. EDUCAUSE.
- Olakulehin, F. K., & Ojo, O. D. (2014). Blended learning in Nigerian universities: A study of the National Open University of Nigeria. *International Review of Research in Open and Distributed Learning*, 15(3), 218-235.
- Oliver, M., & Trigwell, K. (2005). Can 'blended learning' be redeemed? *E-Learning and Digital Media*, 2(1), 17-26.
- Porter, W. W., Graham, C. R., Spring, K. A., & Welch, K. R. (2014). Blended learning in higher education: Institutional adoption and implementation. *Computers & Education*, 75, 185-195.
- Rafique, S., & Ameen, K. (2020). Students' perceptions and challenges of blended learning in a Pakistani public university. *Library Philosophy and Practice*, 2020, 1-15.
- Raza, A. (2019). Regional disparities in higher education access and quality in Pakistan. *Journal of Education and Educational Development*, 6(2), 245-263.
- Reiser, R. A., & Dempsey, J. V. (2017). *Trends and issues in instructional design and technology* (4th ed.). Pearson.
- Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. ASCD.
- Selwyn, N. (2016). *Is technology good for education?* Polity Press.
- Shah, S. F., & Siddiqui, S. (2019). Bureaucracy and curriculum autonomy in Pakistani public universities. *Pakistan Journal of Social Sciences*, 39(3), 987-1001.

- Shahzadi, N., & Ahmed, S. (2022). Hybrid learning in rural Punjab: Student experiences and adaptive strategies. *Journal of Research in Education Sciences*, 15(2), 112–134.
- Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and education. *EDUCAUSE Review*, 46(5), 30–32.
- Unwin, T. (2017). *Reclaiming information and communication technologies for development*. Oxford University Press.
- Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2019). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. *New Media & Society*, 21(2), 354–375.
- Van Dijk, J. A. G. M. (2005). *The deepening divide: Inequality in the information society*. Sage.
- Van Dijk, J. A. G. M. (2020). *The digital divide*. Polity Press.
- Watson, G. R., & Sottile, J. (2010). Cheating in the digital age: Do students cheat more in online courses? *Online Journal of Distance Learning Administration*, 13(1), 1–11.
- World Bank. (2021). *Remote learning during COVID-19: Lessons from today, principles for tomorrow*. World Bank Group.
- Xu, D., & Jaggars, S. S. (2014). Performance gaps between online and face-to-face courses: Differences across types of students and academic subject areas. *The Journal of Higher Education*, 85(5), 633–659.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, 41(2), 64–70.