DIALOGUE SOCIAL SCIENCE REVIEW

INVESTIGATING THE INFLUENCE OF HYBRID TEACHING ON SOCIAL INTERACTION AND INDEPENDENT LEARNING

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ABSTRACT
This study investigated the influence of hybrid teaching models on the social interaction and independent learning of university students. The objectives were to examine the impact of hybrid teaching on social interaction and to ascertain whether hybrid instruction affects students' capacity for independent learning. Ten participants from Abdul Wali Khan University Mardan were selected due to their extensive experience with hybrid teaching (more than five years). A ten-item, closed-ended questionnaire was developed, validated, and pilot-tested. The pilot test data were subjected to a reliability analysis, and Cronbach's alpha coefficient was found to be 0.74. The validated instrument was then used to collect data, which were analyzed using percentages and graphs in Excel. The findings revealed that most respondents believed hybrid learning positively affects communication (50%), confidence in communication (60%), group work (70%), and teamwork (50%) among university students. It was concluded that hybrid learning enhances communication and social interaction, making students more confident in interacting with peers during blended courses. It is recommended that universities provide continuous professional development with incentives to encourage hybrid teaching.

Key words; Hybrid teaching, Social Interaction, independent learning etc

INTRODUCTION
In order to allow students to participate in class in person or virtually, hybrid teaching also referred to as blended synchronous learning combines in-person instruction with online learning in real-time (University of Queensland, node; QAA, 2024). In the post-pandemic environment of educational institutions seeking to strike a balance between excellence and access/flexibility, the approach has become a well-liked remedy (Butz & Stupnisky, 2024). According to research, hybrid models may have a lot of promise since they offer resources, flexibility in scheduling, and the opportunity to create individualized learning (Educause, 2023; Pham & Tran, 2024). Given that students have learned time management and self-regulation techniques to function on their own, they may also encourage autonomy

(Garrison & Vaughan, 2013). However, there is also disagreement over how hybrid teaching affects social interaction. While some sources claim that it encourages group connections, there is evidence that online counterparts may be less involved in peer collaboration than their in-person counterparts (Li & Wang, 2025; Nature, 2023). There is a need for empirical research that focuses on how hybrid education affects students' social connections and their ability to study independently because of the mixed character of this kind of instruction.

Problem Statement

Despite being a quite widespread technique in higher education, hybrid teaching has unclear effects on the two most important aspects of student development social interaction and autonomous learning. While autonomous learning can improve self-efficacy and lifelong learning abilities, collaborative learning, emotional well-being, academic engagement, and social relationships all heavily depend on social contact (Vygotsky, 1978; Zimmerman, 2002). According to certain experimental migrations, hybrid settings might sometimes limit the potential for collaboration with online participants and impede unplanned peer communication (Li & Wang, 2025; Bibi et al., 2024). On the other hand, the hybrid models' adaptability and self-authenticity may promote autonomous learning (Butz & Stupnisky, 2024). How they balance out in the real experience is an issue, as is whether the possible advantages of greater autonomy outweigh the possible decline in peer interaction. By investigating the potential effects of hybrid teaching approaches on students' capacity to learn independently and social interaction in a university setting, the proposed study would close that gap.

Research Objectives

In order to invistiagte the hybrid teaching and social interection of students the following research objectives were focused;
To examine the impact of hybrid teaching on social interaction
To ascertain whether hybrid instruction affects students' capacity for independent learning

Research Questions

What is the impact of hybrid teaching on social interaction?
Whether hybrid instruction affects students' capacity for independent learning?

Significance of the Study

The findings of this study will benefit major stakeholders that are teacher's, student's policy makers curriculum developers and community o improve teaching methods, educators will receive training on how hybrid learning affects both autonomous and collaborative learning (Butz & Stupnisky, 2024). The study will provide the evidence that can inform the development of technology-integrated curriculum that prioritize social and independent learning outcomes will be presented to policymakers and university administrators (Educause, 2023). Since the research study may help guide recommendations that might improve the available interaction possibilities and self-learning resources in hybrid classrooms, university studnts may benefit from it (Pham & Tran, 2024; Li & Wang, 2025).

Operational Definitions

According to QAA (2024) and the University of Queensland (n.d.), hybrid teaching is a blend of traditional in-person classroom instruction and online learning activities carried

out through simultaneous learning in real time, with the students' presence being either physical or virtual.

Social interaction

The degree, caliber, and depth of contact between students and teachers in a hybrid learning environment, both supported and autonomous, with peers and teachers (Vygotsky, 1978; Li & Wang, 2025). The ability of a student to take charge of their own education by setting goals, managing their time well, and studying on their own without the teacher's constant supervision is known as independent learning (Zimmerman, 2002; Garrison & Vaughan, 2013).
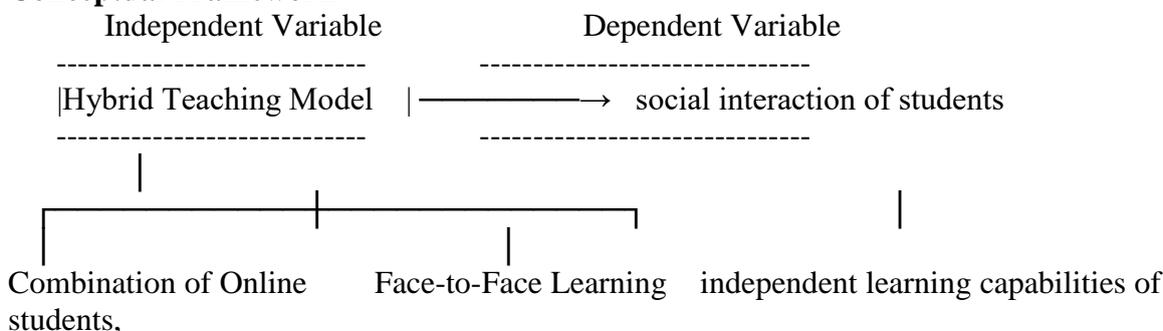
LITERATURE REVIEW
To maximize its benefits, hybrid/blended education combines online and in-person instruction (blended learning combine's online and conventional in-person instruction). The technique began in the late 1990s and has evolved in the context of technology. Early definitions of the term (e.g., Bonk & Graham, 2006) described it as a learning system that combines computer-mediated learning with in-person instruction. The trans formative component of this integration has affected higher education, according to other academics including Garrison and Kanuka (2004).

Theoretical Framework
The Social Learning Theory by Bandura (1977) is one of the most popular theories that underpin hybrid learning environments. It views learning as a cognitive process that is influenced by people's observations of others, modeled behaviors, and reciprocal interactions between cognition and the environment. This theory is ideal for hybrid models because these environments suggest both in-person and remote interactions.

Constructivism stresses that knowledge is created by learners based on their experiences. Active learning in the classroom that facilitates meaningful involvement and self-evaluation, as well as the preparation of online resources before classes, help with this (Jonassen, 1999).The concepts of behaviorism and cognitive load theory also play a role. Behaviorist concepts are applied in online tests and feedback systems, while cognitive load theory directs instruction based on the necessity of keeping blended learners sane by giving them time to integrate new information into their cognitive processes Ahmad et al. (2021).

Conceptual Framework

Independent Variable   Dependent Variable

|Hybrid Teaching Model | ⟶ social interaction of students

Combination of Online   Face-to-Face Learning   independent learning capabilities of students,

Hybrid Teaching and Social Interaction
Additionally, blended learning settings let students communicate with their classmates and feel complete in the community. One illustration might be a course that combines online and in-person instruction. Students in these classes feel more fulfilled and like they belong. Additionally, related infrastructure (such learning management systems (LMS)) facilitates virtual engagement, communication, and resource sharing while reinforcing social

dynamics in hybrid contexts (Minaz & Idris, 2023).

Hybrid Teaching and Independent Learning
The hybrid models promote self-reliance and self-directed learning. Through the use of learning materials and learning content, they assist students in managing their own progress, fostering the development of self-control and time management skills. Furthermore, the technologies used in mixed settings encourage motivation, self-discovery, and involvement (Ali, Minaz & Irshadullah 2023).

Empirical Studies (Global, Regional, Local)
A number of meta-analyses indicate that blended learning, as opposed to conventional or solely online learning, somewhat increases student achievement and satisfaction (Shah et al., 2021). According to one study of students at Pakistan's public institutions, blended learning which includes peer collaboration and academic experience had a favorable impact, despite implementation problems such inadequate infrastructure and a lack of training (Ali, Minaz & Irshadullah 2023).

Research Gap
Although social interaction and its autonomous learning-related features are discussed separately in the literature, their integration in hybrid learning environments particularly in Pakistani academic systems of higher education has received little empirical research (Minaz, Tabassum & Idris, 2017). By examining both autonomous learning and its social involvement in hybrid learning, the current study attempts to close that gap.

METHODOLOGY
Research Design
The research study was quantitative. According to (Creswell & Creswell, 2018) quantitative research enable the retrieval of numerical data that can be evaluated using statistics.

Population and Sample
The faculty of the Social Science departments at Abdul Wali Khan University Mardan (AWKUM) was selected as the target population for this study. Among these university teachers, only those with five to ten years of relevant experience in hybrid teaching, and who had been actively engaged in such teaching for the past five years, were purposively selected. According to Etikan, Musa, and Alkassim (2016), purposive sampling is appropriate for research that requires a certain level of expertise and contextual knowledge. Furthermore, Cohen (1992) suggests that the selected sample size is sufficient to ensure adequate statistical power and a moderate effect size. The rationale for choosing this small sample is that many teachers were either unaware of hybrid teaching, had not yet implemented it, or had not used it consistently.

Research Instrument and data collection
Data were collected using a closed-ended questionnaire cssisting of ten research items. A three-point Likert scale (agree, disagree, and uncertain) was employed to evaluate the items. Experts in the field of education reviewed the research instrument to establish face and content validity, and it was subsequently modified based on their suggestions. The validated instrument was pilot-tested, and reliability was confirmed with a Cronbach's alpha of 0.74. According to Taber (2018), a Cronbach's alpha score of 0.70 or above is

considered acceptable. Furthermore, the data were collected from experts in hybrid teaching at the university using Google Forms.
The collected data were analyzed using percentages and graphs.

DATA ANALYSIS
Table No 1
Hybrid learning enhances my communication among students and colleges

No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	5 (50 %)	3 (30 %)	2 (20 %)	50 %
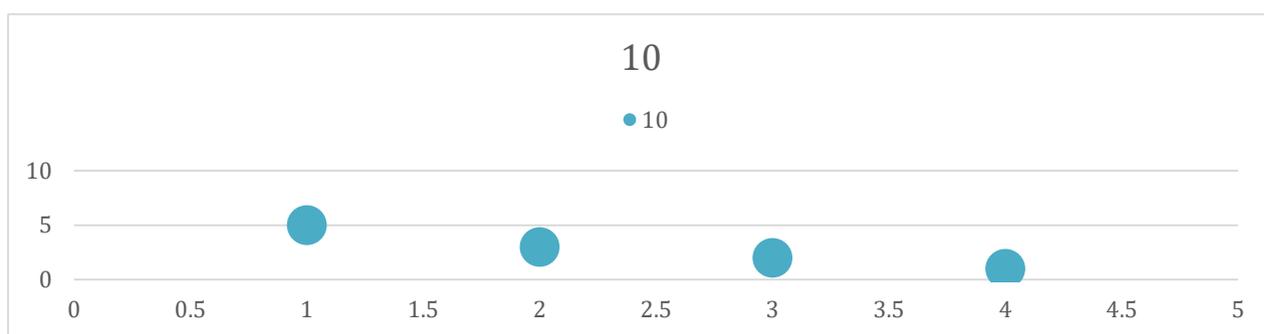
Table No, 1 show that (50%) responded were 'Agreed' that hybrid learning enhance my communication skills.

Table No 2
I am confident to communicate in blended courses.

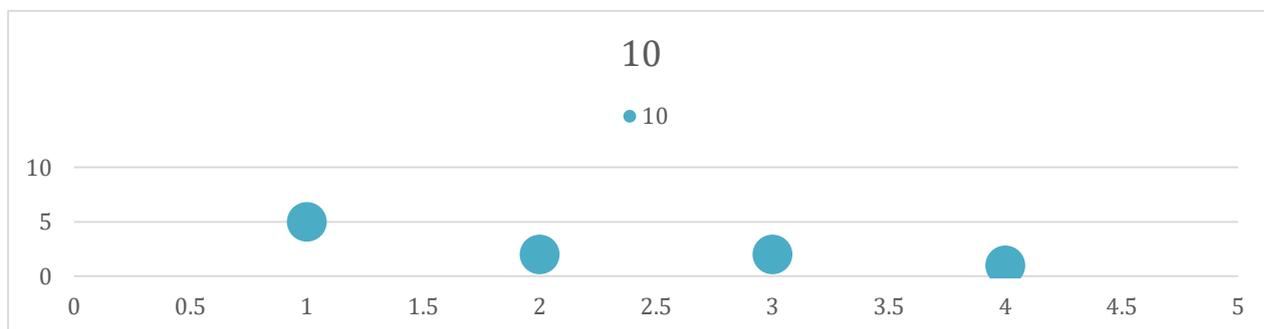| No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	6 (60 %)	2 (20 %)	2 (20 %)	60 %

Table No, 2 shows that (60%) responded were 'Agreed' that I am confident to communicate in blended courses.

Table No 3
Hybrid learning promotes group work

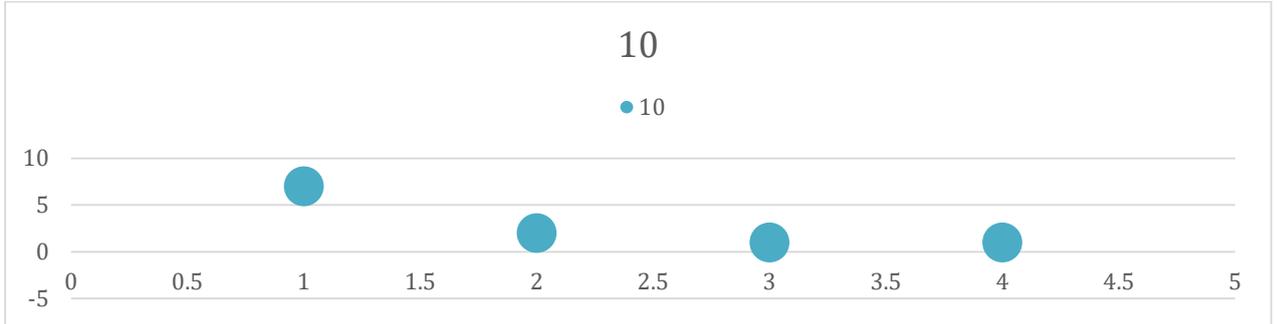| No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	7 (70 %)	2 (20 %)	1 (10 %)	70 %

Table No, 3 show that (70%) responded were 'Agreed' that Hybrid learning promotes group work.

Table No 4
Hybrid learning intensifies teamwork

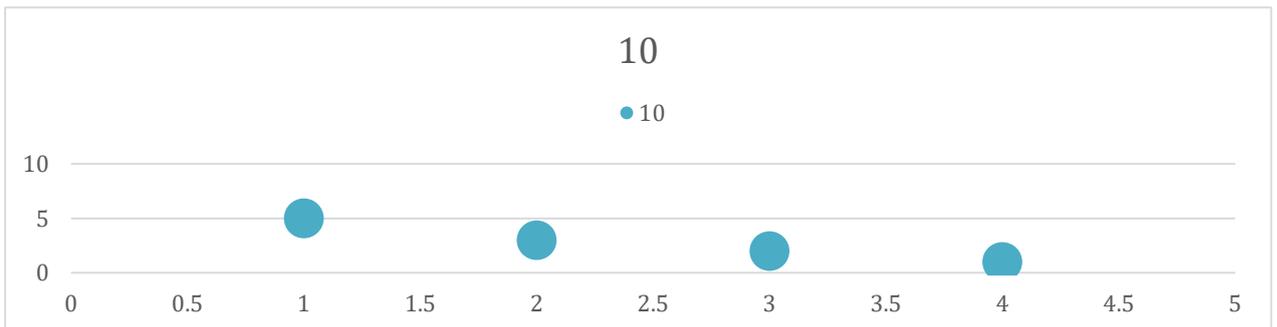| No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	5 (50 %)	3 (30 %)	2 (20 %)	50 %

Table No, 4 show that (50%) responded were 'Agreed' that Hybrid learning intensifies teamwork.

Table No 5
Hybrid learning intensifies discussions in groups

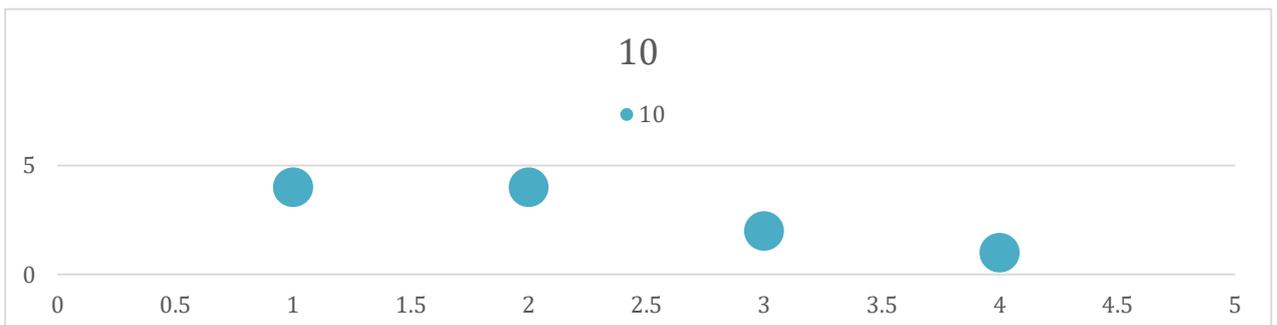| No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	4 (40 %)	4 (40 %)	2 (20 %)	40 %

Table No, 5 shows that (40%) responded were 'Agreed' that Hybrid learning intensifies discussions in groups.

Table No 6

The hybrid learning helps me in time management

No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	4 (40 %)	5 (50 %)	1 (10 %)	50 %

Table No, 6 shows that (50%) responded were 'Disagreed' that the hybrid learning helps me in time management.

Table No 7

The fact is that I encouraged individual learning in hybrid classes

No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	3 (30 %)	2 (20 %)	5 (50 %)	50 %

Table No, 7 show that (50%) responded were 'undecided' that the fact is that I encouraged to individual learning in hybrid classes.

Table No 8

My students are able to learn with their own pace

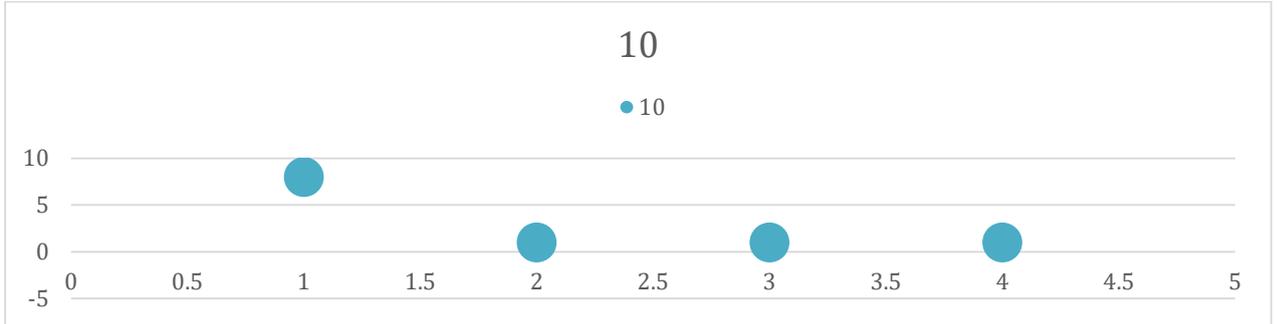| No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	8 (80 %)	1 (10 %)	1 (10 %)	80 %

Table No, 8 shows that (80%) responded were 'Agreed' that. My students are able to learn with their own pace

Table No 9

Hybrid learning makes self-study skills increase

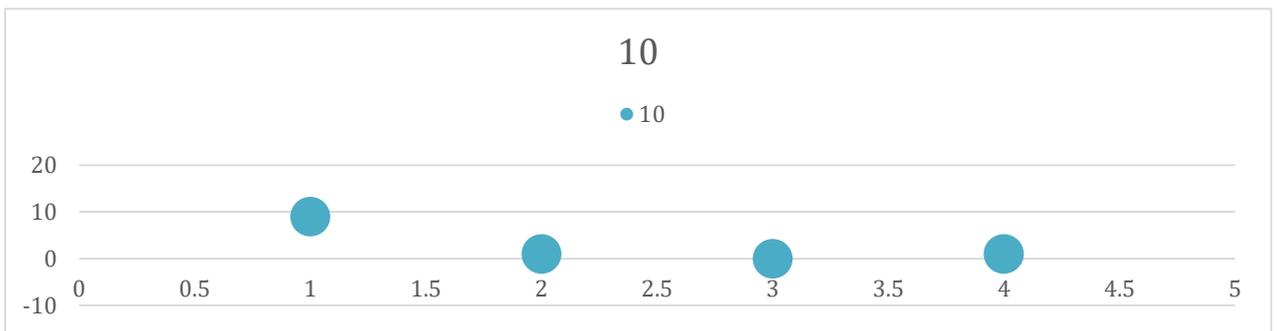| No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	9 (90 %)	1 (10 %)	0 (0 %)	90 %

Table No, 9 shows that (90%) responded were 'Agreed' that. Hybrid learning self-study skills increase.

Table No 10

I always encourage and find online resources

No Responded	Agreed No with %	Disagreed No with %	Undecided No with %	High %
10	7 (70 %)	1 (10 %)	2 (20 %)	70 %
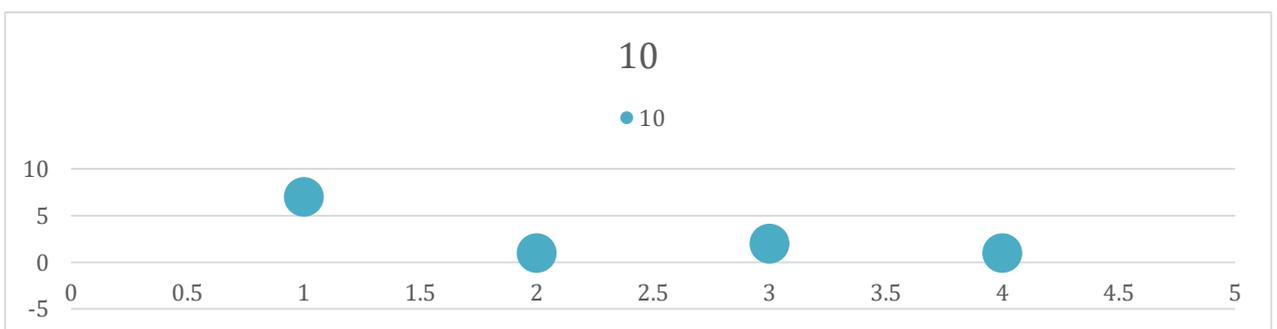
Table No, 10 shows that (70%) responded were 'Agreed' that I am able to find and use

online resources.

FINDINGS
The results suggest that most of the respondents thought that hybrid learning positively affects communication (50%), confidence in communication (60%), group work (70%) and teamwork (50%). However, forty percent agreed that it makes group discussion more; fifty percent of the respondents rejected this argument. Fifty percent of the respondents were not sure whether to encourage self-learning. A huge percentage (80%) said they could study without a teacher, (90%) said they could study better with no teacher and (70%) said they could use the online tools effectively.

CONCLUSION
On the basis of analysis ,it was concluded that Hybrid learning enhances the communication and social interaction among my students and confident to communicate with students during blended courses, Hybrid learning intensifies teamwork, Hybrid learning intensifies discussions in group, The hybrid learning helps me in time management, The fact is that I am encouraged to learn on my own in hybrid classes, I am able to work without a teacher, Hybrid learning makes my self-study skills increase, I am able to find and use online resources.

RECOMMENDATIONS
On the basis of conclusion, it was recommended that the use of hybrid learning is justified by the fact that hybrid teaching reduce communication gap which is very essential to support their students on door step Ali, Minaz & Irshadullah (2023). Therefore it is recommended that special training and incentives should be provided to university teachers along with the high institutional support to make the students able to compete in the modern word of digitalization.

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