Blended instruction and Students' academic motivation: A correlational study at Higher Education level

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ARTICLE INFO	ABSTRACT
	Blended instruction is also considered an effective approach for enhancing students' academic motivation. In this research, the researchers employed a correctional research method for examining the relationship between blended instruction and students' academic motivation at the higher education level. This study answered three research questions, such as: (1) What are the students' perceptions regarding the teachers' usage of blended instruction? (2) What are the major factors affecting blended learning? (3) Do students' academic motivation correlate significantly with blended instruction? The population consisted of all students studying in Bachelor of Science programs at public and private universities in Faisalabad, Pakistan. We selected a sample of 200 respondents from two universities using a simple random sampling method. The researchers developed a closed-ended questionnaire as an instrument for data collection. The researcher collected all the data through personal visits and used descriptive and inferential statistics in SPSS for analysis. Based on statistical outcomes, it was found that the majority of the students agreed regarding the teachers' usage of blended instruction and factors affecting blended instruction. Moreover, there was a positive correlation between blended instruction and academic motivation. This study recommends encouraging teachers to incorporate blended instruction into their teaching and learning, and factors affecting blended instruction may be managed by university management to implement blended instruction at universities.

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INTRODUCTION

Teaching strategies are essential for students' learning and achievement in their fields of study. Traditional teaching approaches, generally known as teacher-centered, do not meet the demands of children born in the twenty-first century. As a result, new teaching approaches are required to impart knowledge to children in the digital era. Blended instruction, which integrates traditional and online teaching methods, has emerged as a vital tool to promote educational transformation and innovation (Li et al., 2022). Since 2020, blended instruction, which mixes traditional and online teaching approaches, has dominated the global educational scene. It combines the two teaching styles (Allen & Seaman, 2010; Garrison & Kanuka, 2004; Li & Zhao, 2004) and gains the benefits of both, including flexible learning time and place, simple access to and sharing of materials, and enhanced engagement (Lock, 2006). According to Schlager et al. (2002) and Feng et al. (2018), several scholars perceive blended instruction as a vital instructional approach to overcome the limits of traditional instruction and pure online learning. Moreover, Feng et al., (2019) agree that blended teaching is a novel approach to teaching reform. According to Garrison and Kanuka (2004), blended instruction allows instructors to re-examine and restructure their teaching practices. According to Wuxue (2023), the blended teaching approach is an innovative method to enhance teaching and learning.

Researchers have conducted extensive studies to examine the efficiency of blended education. They found significant and positive effects of blended instruction on student success (Li et al., 2022), more effective as compared to traditional instruction (Du et al., 2022). Most recent study findings demonstrate it more effective way of instruction (Pramita et al., 2024; Han, 2023; Tong et al., 2022; Cao et al., 2021). Some of these studies (Cao, 2023; Taghizadeh & Hajhosseini, 2021) discovered that learners had a good perspective towards blended learning due to its flexible learning options and promotion of creativity. Some research findings revealed the positive effects of blended learning on students' motivation (Peng & Fu, 2021; Wong et al., 2020). Furthermore, Kumar et al. (2021) found that participation in blended learning provides teachers and students with a positive learning experience. They also

suggested that building an online teaching platform is likely the first step towards developing a blended learning model. Therefore, the current status of blended teaching and learning in higher education needs to be investigated in the context of Pakistani universities to understand its effectiveness from the students' perspectives.

LITERATURE REVIEW

The Internet has emerged as an essential teaching and learning tool in higher education, with many institutions now incorporating online platforms for knowledge transfer and school administration. Thus, blended learning is an educational approach that combines face-to-face instruction with online technological moderation (Graham, 2006). According to Driscoll (2022), states that blended learning may be applied in various ways, such as by combining web-based technologies with certain academic assignments. This approach's diversity meets a range of educational demands. Higher education has advanced both online and offline teaching simultaneously because of technical advancements; this was particularly true once COVID-19 spread and many universities switched to online instruction.

Initially, the term "blended learning" appeared in the 21st century. It was recognized as a basic element of the global remote learning system. It was first used to refer to a course developed to engage workers to continue in the workplace and study (Sharma, 2010). According to Deschacht and Goeman (2015), blended learning and blended teaching refer to strategies that make use of opportunities to use both traditional and digital learning materials, methodologies, and resources at the same time. According to Hubackova and Semradova (2016), after digital advancement, online and offline learning methods are recognized as methods that combine face-to-face and online learning. Blended instruction is becoming the new standard form of teaching in the post-pandemic period, with the continued growth of the internet and technology, instruction and new requirements for learning (Porter et al., 2014). According to McKenzie et al., (2022), blended learning is widely considered to be an instructional approach that combines in-person instruction with interactive online activities. It involves many teaching approaches and resources regarding information and communication technologies.

The blended instructional approach aims to provide learners with a flexible and individualized learning experience. It is widely acknowledged that blended learning enhances students' academic motivation and engagement. Here are some common teaching strategies that fall under this type of blended teaching-learning:

Personalized Learning

It is an approach that aims to facilitate personalized learning experiences for students. In blended learning instruction, ICTs enable teachers to adjust their lectures according to the needs and learning styles of their students. In this regard, adaptive software is available for developing personalized reading activities that consider students' needs and reading skills (Christodoulou & Angeli, 2022). This teaching approach helps teachers modify their lectures to enhance students' motivation and academic performance (Liu et al., 2006; Gómez et al., 2014). Arnesen et al., (2019) reported that students' attitudes were more positive in a personalized learning experience.

Collaborative Learning

It is a type of learning in which students are divided into small groups to discuss various concepts or issues and provide suitable solutions. In blended teaching-learning, teachers use various online tools for collaborative learning. These online tools facilitate students in interacting, discussing, and working on the same topics in small groups. In this regard, teachers using blended instruction create online discussion boards for students through a learning management system (LMS) (Wongpratoom & Sranamkam, 2019).

Flipped Learning

It is a type of learning in which the teacher delivers lectures outside the classroom through videos and presentations before the regular class to facilitate interaction and enhance student engagement. In blended teaching-learning, teachers create a virtual course for students on social media networks for interaction and engagement before conducting the regular class. Students participate in the virtual course and study various types of online resources such as podcasts, videos, and interactive simulations before the regular class. This approach enhances student engagement, motivation, and performance (Capone et al., 2017).

Inquiry-based learning

The inquiry-based learning approach to blended instruction focuses on student engagement and motivates them to ask questions repeatedly in order to explore real-world issues. In blended learning, teachers engage their students by developing real-world connections to explore high-level questions. Learners receive positive encouragement in this approach and engage in problem-solving activities. In this method, teachers utilize the internet and provide

various online resources to students for independent learning. This process enhances student engagement, motivation, and academic performance (Longo, 2016).

Thus, blended instruction is considered an effective teaching approach that enhances student engagement, academic motivation, learning, and academic performance (Garrison & Vaughan, 2008; Ashraf et al., 2021). This approach is based on the quality of teaching (Derbel, 2017). Researchers such as Cao (2023), Bouilheres (2020), and Owston et al. (2013) have reported its effectiveness and positive effects on student engagement, motivation, learning, and academic performance. However, blended teaching-learning requires strong planning and teacher training (Derbel, 2017; MacDonald, 2017; Ayob et al., 2023).

Earlier studies conducted by Tashtoush et al. (2023) reported positive effects of blended instruction on student engagement, academic motivation, and academic performance. Yu and Shen (2022) studied the blended teaching model and discovered that it had a significant impact on college students' English academic performance and learning motivation, as well as a positive effect on improving their English academic performance and cultivating learning motivation. Wang et al., (2022) conducted a study by using survey method and revealed that students in session 2017-2018 performed better on the mid-term and final exam as compared to the students of session 2015 due to blended instruction approach. Their study further discovered that both teachers and students had good attitudes towards blended learning. The majority of teachers and students agreed that blended learning increases academic students' motivation to learn independently, learning quality, and promotes teacher-student engagement. Li et al., (2022) reported that blended instruction is an effective method of teaching and it had a positive effect on learners' performance in terms of learning motivation, academic motivation and attitudes towards learning. The investigation of Yin and Yuan (2021) discovered that resources like PPT used during blended learning are directly and positively related to self-efficacy and learning motivation.

According to students' perspectives, the findings of Zhou's (2021) study demonstrated the efficiency of the blended learning strategy. Furthermore, the questionnaire and semi-structured interview revealed the students' comfort level with the blended learning method of instruction. Blended learning helped pupils acquire 21st-century skills like problem-solving and self-directed learning in addition to strengthening their listening abilities. Güneş & Alagözlü (2020) discovered that there were significant and positive links between blended learning and learner autonomy, motivation and academic success. Similarly, Güneş (2018) also found that students taught through the blended method performed better as compared to the traditional method. Tseng and Walsh (2016) discovered that students taught through a blended course reported higher learning motivation as compared to a traditional course.

Above all, studies found that blended instruction in blended learning had a positive relationship with students' academic motivation, engagement, and performance. In light of the above, the current study examined the relationship between blended instruction and academic motivation of the students, teachers' usage of blended instruction, and factors affecting blended instruction at the higher education level.

Problem Statement
In the modern era of technology, blended instruction is emerging as an innovative approach to teaching and learning that combines face-to-face and online instruction with online learning activities. Although research in developed countries has suggested positive effects of blended instruction on students' academic motivation and performance, there is a lack of empirical evidence in Pakistani higher education addressing the phenomenon under investigation. As a result, the present study will fill a gap in the body of literature by answering the following research questions: How do students perceive the teachers' blended instruction? Is there any relationship between blended instruction and students' academic motivation? What are the major factors influencing blended instruction at the higher education level in Pakistan? The outcomes of this investigation will be beneficial for policymakers and stakeholders involved in Pakistani higher education to understand the teachers' usage of blended instruction, its relationship with students' academic motivation, and the factors influencing blended instruction for the successful implementation of this teaching approach.

Research Objectives & Hypothesis
 i. To assess students' perceptions regarding the teachers' usage of blended instruction.
 ii. To evaluate students' opinions towards the major factors affecting blended learning.
 iii. To investigate the correlation between blended instruction and students' academic motivation.
 iv. Hypothesis: There is a statistically significant effect of blended instructions on students' academic motivation.

RESEARCH METHODOLOGY

The research intends to discover the relationship between blended instruction and students' academic motivation. The researchers completed this study using a correlational research design, collecting quantitative data from the participants. The population of this study was comprised of students studying in Bachelor of Science programs at public and private universities in Faisalabad. A simple random sampling method selected a sample of 200 students from two universities, one belonging to the public sector and the other to the private sector. The researcher developed a closed-ended questionnaire based on a five-point Likert scale for data collection. This questionnaire had four sections with 25 items: section I provided demographic information; section II had 10 items related to teachers' usage of blended instruction; section III had 10 items related to academic motivation; and section IV had 6 items related to factors affecting blended instruction. The researcher obtained expert opinions for content and construct validity, and a pilot study method used to ensure the questionnaire's reliability. The alpha occurred as (α =.86), indicating that the questionnaire is reliable and can be used on a large scale for data collection. The researcher collected data through personal visits and analyzed it using descriptive and inferential statistics in SPSS (version 26).

Research Framework

This study was completed through below research framework. In this framework, there is one independent variable, such as blended instruction (face-to-face & online instruction) and one dependent variable, such as academic motivation.
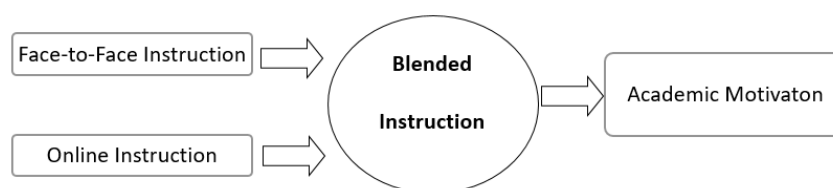

Figure 1: Research Framework

This study was completed through the above research framework developed by the researcher.

RESULTS/FINDINGS
RQ1: What are the students' perceptions towards the teachers' usage of blended instruction?

Table 1: Statement-wise Means and SDs of students' perceptions regarding teachers' usage of blended Instruction at their universities (N=200)

Indicator: Teachers' usage of blended Instruction	Mean	SD	Perceiving degree	Rank
Teachers used both Face-to-Face and online teaching techniques.	3.98	1.005	-High	2
My instructors provided recorded lecture materials.	3.88	1.025	-High	5
Teachers assisted students in completing the online course evaluation.	3.88	1.023	-High	6
Teachers practiced in real-time/live instruction.	3.86	1.066	-High	7
Teachers conducted online discussion sessions.	3.92	3.152	-High	4
Teachers evaluated students' progress using online quizzes, games, and examinations.	3.77	1.165	-High	9
Teachers used the peer review method for conducting assessments.	3.93	1.039	-High	3
Teachers provided audio-visual resources for learning.	3.79	1.118	-High	8
Teachers encouraged students to submit online feedback.	3.74	1.098	-High	10
My teachers' blended learning strategies were remained effective.	4.08	.951	-Very High	1
Overall Results	3.88	1.264	-High	

Table 1 shows statement-wise mean scores of students' perceptions regarding teachers' usage of blended instruction at their universities. Results revealed that the overall mean scores of all statements occurred at (M = 3.88), which is lower than (M = 3.50), which revealed a higher level of perceptions of the students towards all the statements included in the indicator of teachers' usage of blended instruction for their learning. The following graph also shows the item-wise mean score and standard deviation.

The following graph analysis shows teachers' usage of blended Instruction and its item-wise mean score and standard deviation.
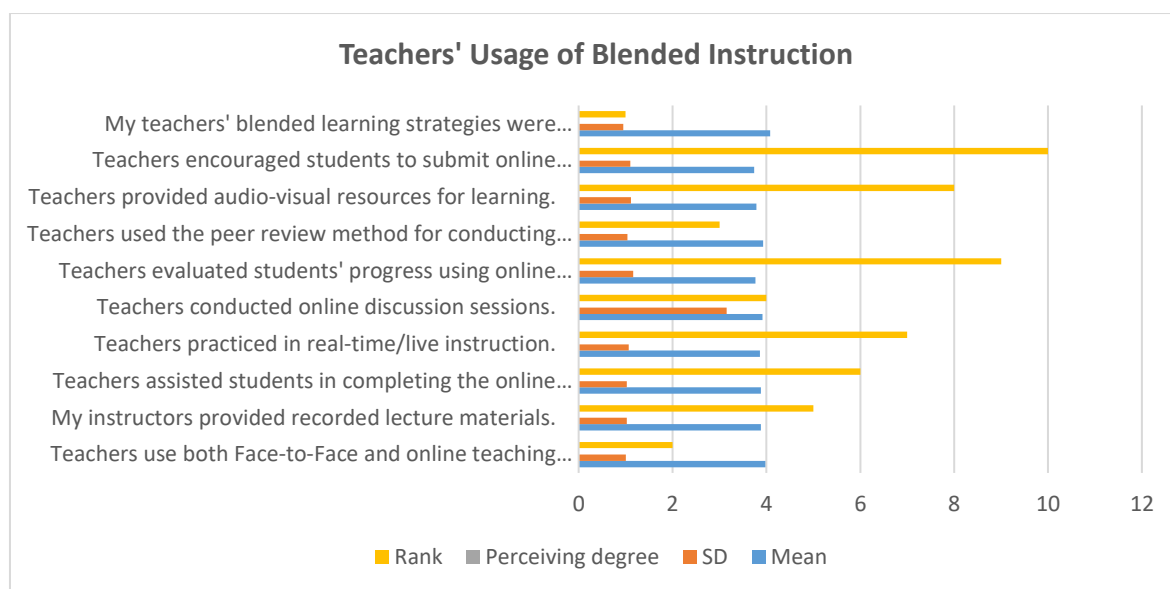
Figure 2: Bar graph showing teachers' usage of Blended Instruction

Table 2: Statement-wise Means and SDs of students' views towards the effects of blended instruction on academic motivation (N=200)

Factor: Academic Motivation	Mean	SD	Level of Agreement	Rank
My self-learning is motivated by learning through web content during blended learning.	3.60	.882	-High	6
Blended learning programs increase students' motivation to learn.	3.62	.844	-High	3
Online group discussions increase students' academic motivation.	3.56	.937	-High	10
Blended learning encouraged me to learn the material thoroughly.	3.58	.906	-High	7
Blended learning developed my study skills.	3.58	.914	-High	8
Blended learning motivated me to adopt self-regulated learning strategies.	3.62	.902	-High	2
Blended learning developed my interest in self-learning.	3.64	.841	-High	1
Blended learning empowers me to do well in all academic activities.	3.60	.887	-High	5
Blended learning improved my academic engagement.	3.61	.897	-High	4
Blended learning improved my academic motivation.	3.57	.890	-High	9
Overall Results	3.59	0.891	-High	

Results demonstrated in Table 2 discovered that students had a higher level of agreement towards the effects of blended Teaching-learning on their academic motivation, with a total mean score of (Mean =3.59) and standard deviation of (SD =0.891). Thus, it has been found that blended instruction had a significant effect on the academic motivation of university students.

RQ 2: What are the major factors affecting blended instruction?

Table 3: Statement-wise Means and SDs of students' attitudes towards factors affecting blended learning (N=200)

Indicator: Factors Affecting BL	Mean	SD	Perceiving degree	Rank
Lack of technological infrastructure.	4.12	1.023	-Very High	1
Lack of instructional design.	3.95	1.118	-High	3
Lack of teachers' training.	3.88	1.045	-High	4
Lack of students' technical skills.	3.96	.999	-High	2
Lack of support from the university (administration, technical, and financial).	3.80	1.178	-High	5
Overall Results	3.94	1.072	-High	

Table 3 shows the statement-wise mean score and standard deviation of students' opinions about the factors that influence blended learning. Results discovered that the overall mean score occurred at (M = 3.94) for all statements, which is higher than (M = 3.50), indicating that students had a higher level of opinion towards all the statements contained in the factor affecting blended learning. The graph below also displays the item-wise mean score and standard deviation.

The following graph analysis shows factors affecting blended learning and its item-wise mean score and standard deviation.
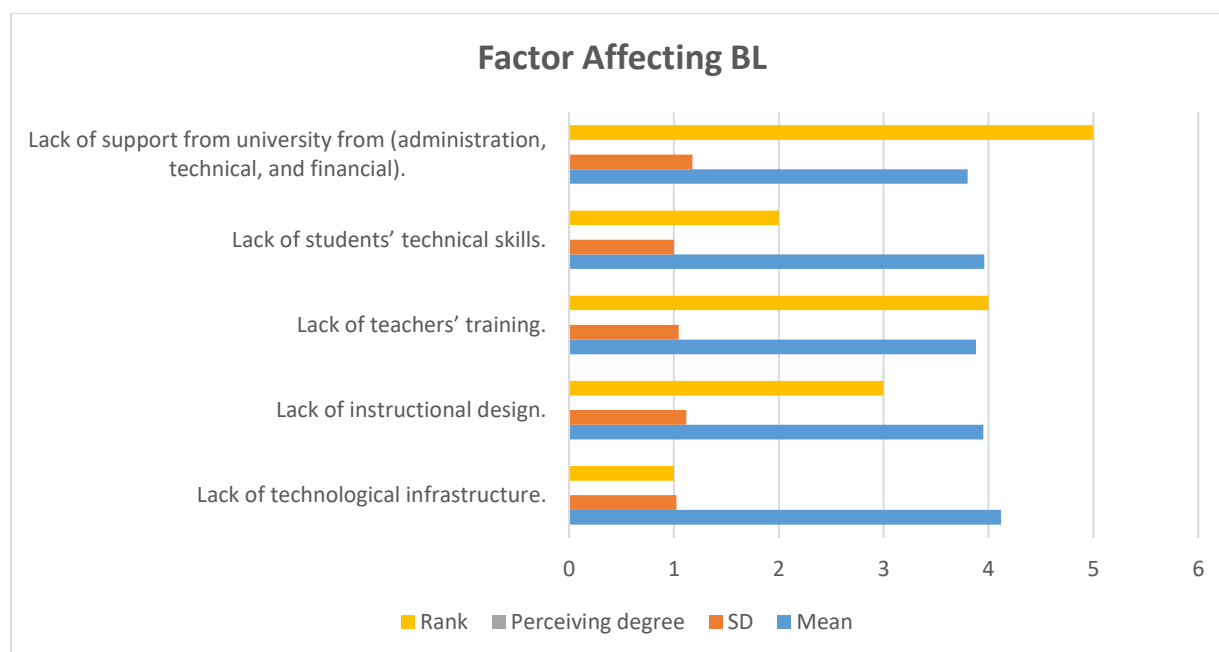
Figure 3: Bar graph showing factors affecting blended learning

RQ 3: Do students' academic motivation correlate significantly with blended instruction?

Table 4: The relationship between blended instruction and students' academic motivation

Variables		Blended_Instruction	Academic_Motivation
Blended_Instruction	Pearson Correlation		.677**
	Sig. (2-tailed)		.000
	N	200	200
Academic_Motivation	Pearson Correlation	.677**	
	Sig. (2-tailed)	.000	
	N	200	200

**Correlation is significant at the 0.01 level (2-tailed).

The researcher used the Pearson's correlation coefficient (r) test to investigate the relationship between blended instructions (IV) and academic motivation of the students (DV), as shown in Table 4. Based on the outcomes, it has been discovered that there was a positive relationship between the two variables that is statistically significant (r =.677, p =.000<.01 and .05 level). These results show that blended instructions had a statistically significant positive relationship with the academic motivation of the students.

Hypothesis: There is a statistically significant effect of blended instructions on students' academic motivation.

Table 5: Effects of blended instruction on academic motivation of the students

a) Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.677*	.458	.455	.47703

*Predictors: (Constant), Blended_Instruction

b) ANOVA*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	38.043	1	38.043	167.180	.000**
Residual	45.057	198	.228		
Total	83.100	199			

*Dependent Variable: Academic_Motivation
**Predictors: (Constant), Blended_Instruction

c) Coefficients*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.714	.174	-	9.832	.000
Blended_Instruction	.570	.044	.677	12.930	.000

a. Dependent Variable: Academic_Motivation

Table 5 shows that a simple linear regression test was used to investigate the extent to which blended instructions can predict the academic motivation of the students. Results of the regression analysis discovered a strong positive correlation between blended instruction and academic motivation (r =.677), and the regression model predicted 45% of the variance. The model was a good fit for the data (167.180, p=.000 <.05 levels). Therefore, we accept the research hypothesis "There is a statistically significant effect of blended instructions on the academic motivation of the students".

RESULTS AND DISCUSSION
The results showed that the overall mean scores for the indicator of teachers' usage of blended instruction were (M = 3.88). Which was lower than (M = 3.50). This demonstrate that students had a high level of perceptions regarding teachers' usage blended instruction, including the provision of recorded lectures, assistance in completing online courses, real-time/live instructions, online discussions, execution of online quizzes, games, and examinations, utilization of peer reviews, provision of audio-visual resources for learning, provision of online feedback, and provision of effective blended learning facilities. This finding is consistent with Cao (2023) and Taghizadeh and Hajhosseini (2021), as their studies also found that students had a positive attitude towards blended learning and believed that it could provide flexible learning options and promote creativity. Additionally, in this research, an overall mean score (M=3.94) regarding factors influencing blended instruction from the perspective of university students was discovered, that is in line with Antwı-boampong's (2021) research, which identified four factors that impact blended learning: infrastructure, faculty concerns, and institutional and technical support challenges. Moreover, this investigation has discovered that blended instructions had a statistically significant positive relationship with the academic motivation of the students (r =.677, p =.000<.01 and .05 level). In this regard, the findings of (Li et al., 2022; Peng & Fu, 2021; Wong et al., 2020; Güneş & Alagözlü, 2020; Sari & Wahyudin, 2019) are consistent with the findings of this study in terms of positive relationships between blended teaching-learning and students' academic motivation.

CONCLUSIONS
In view of the statistical results, it has been concluded that most of the university students agreed with their teachers' use of a blended teaching approach. This includes providing recordings of lectures, engaging in online courses and assignments, offering live lectures, facilitating participation in online discussions, conducting online quizzes and games, performing peer reviews of students' work, providing online learning resources, giving online feedback, and ensuring online interaction between teachers and students. The majority of the students agreed towards the factors affecting blended instruction, like a lack of technological infrastructure, a lack of instructional design, a lack of teacher training, insufficient student readiness and technical skills, and a lack of administrative, technical, and financial support from the university. Moreover, this study revealed that blended instruction had a positive relationship with the academic motivation of the students. The regression model reveals that teachers' usage of blended instruction accounts for 45% of the variance in the academic motivation of the students.

RECOMMENDATIONS
Teachers' usage of blended instruction is significant for the effectiveness of blended learning and increasing students' academic motivation. Thus, this study recommends that teachers strengthen their usage of blended instruction in order to enhance students' academic motivation. In order to improve blended learning, this study recommends minimizing the factors that affect its effectiveness. Universities should arrange the provision of adequate infrastructure and resources, faculty development and training, faculty collaboration, student engagement through interactive activities, ongoing assessment and feedback, a supportive learning environment, learner-centered teaching strategies, and industry partnerships to enhance the effectiveness of blended learning.

LIMITATIONS AND STUDY FORWARDED
The current study solely focused on two universities in the Faisalabad Division and relied only on quantitative data collected from students to answer the research questions. Future research should involve a wider range of stakeholders to collect both quantitative and qualitative data, enabling a more thorough investigation of the studied phenomenon. Future studies may use a variety of methodologies, such as qualitative, quantitative, or experimental techniques, to investigate blended teaching from the perspective of university teachers and administrators, to improve the effectiveness of blended instruction.

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