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Effect of Blended Learning Strategies on Higher Order Thinking Skills of University Students in South Punjab: An Explanatory Study

Muhammad Ramzan[1], Jam Muhammad Zafar [2,] Mazhar Hussain Bhadroo[3,] Naeem Ullah [4*]

1. PhD Scholar[1], Department of Education, KFUEIT, Rahim Yar Khan, Pakistan
Email ID: ramzangujjar19@gmail.com
2. Assistant Professor[2], Department of Education, KFUEIT, Rahim Yar Khan, Pakistan
Email ID: dr.zafar@kfueit.edu.pk
3. Lecture[3], Institute of Humanities and Social Sciences, KFUEIT, Rahim Yar Khan, Pakistan
Email ID: mazharhussainbhadroo@gmail.com
4. Assistant Professor[4*], Department of Education, KFUEIT, Rahim Yar Khan, Pakistan
Email ID: dr.naeemullah@kfueit.edu.pk

Corresponding Author*: dr.naeemullah@kfueit.edu.pk

Abstract

The study entitled, “Effect of Blended Learning Strategies on Higher Order Thinking Skills of University Students in South Punjab: An Explanatory Study”. Research objective of the study was to determine the effect of blended learning strategies on higher order thinking of university students in south punjab. The study is survey and descriptive in nature. The quantitative as well as qualiatative (QUAN-qual) and explanatory research approach was used in this study. Population of the study comprised of three clusters at divisional level i.e. Bahawalpur, Multan and Dera Ghazi Khan. Total twelve (12) universities were selected as sample by using simple random sampling method (through bowl fish method) to get more Then required sample size, the sample included all 48 HoDs, 96 faculty members and 912 students, from the selected Universities to public and private in South Punjab. Total sample of the study consisted of 1056 respondents. The collected data was analyzed through SPSS-24 using relavent statistical formulas. The study found that 91.2% of respondents agreed that faculty members would adopt new blended learning modules in the future, while 4.65% disagreed, and 4.15% of respondents were undecided. Mean score of 4.425 and standard deviation of 0.608 supported. The value 0.073 showing a positive correlation. The regression value 0.864 supported, the significance level 0.481 also supported. Furthermore, 90.65% of respondents agreed that faculty members communicated and discussed with students in group conference mode, while 6.75% disagreed, and 2.6% of respondents were undecided. Mean score 4.32 and standard deviation of 0.754 supported. The value 0.229 showing a positive correlation. The regression value of 0.717

supported with a significance level of 0.225. The study concluded that a significant number of respondents showed willingness to adopt new blended learning modules in the future and majority of faculty members communicated and engaged in discussions with students through group conference modes.
Key words: Blended learning strategies, higher order thinking, university students, skills' development, explantory study.

Introduction

Blended learning strategies refer to the combination of traditional face-to-face instruction with online or digital learning components. It involves integrating technology and digital resources into the learning process to enhance students' educational experiences (Shoukat et al., 2024). Blended learning typically includes a mix of in-person classroom activities and online learning activities, which can include multimedia resources, interactive exercises, discussion forums, virtual simulations, and more (Mawardi & Budiningsih, 2023).

The students can access learning materials and resources at their own pace and convenience, allowing for personalized learning experiences (Cao, 2023). The use of multimedia, interactive elements, and online collaboration tools can increase student engagement and active participation in the learning process (Radulović, Dorocki, Olić Ninković, Stojanović, & Adamov, 2023). Blended learning allows for a variety of instructional approaches, catering to diverse learning styles and individual needs (Ayob, Daleure, Solovieva, Minhas, & White, 2023). The online components provide access to a wide range of resources, including educational videos, articles, e-books, and interactive simulations, expanding the learning opportunities beyond the classroom (Niu et al., 2023). Blended learning often allows students to progress through the material at their own speed, enabling them to revisit concepts or spend more time on challenging topics (AlManafi, Osman, Magableh, & Alghatani, 2023). The online platforms and tools facilitate communication and collaboration among students and between students and teachers, promoting interaction and knowledge sharing (Aydın & Murathan, 2024).

The digital learning platforms can collect data on student performance and progress, allowing teachers to monitor student understanding and provide targeted support (Xu, Zhao, Zhang, Liew, & Kogut, 2023). Overall, blended learning strategies aim to combine the best elements of traditional instruction and digital resources to create a more dynamic and effective learning environment (Aydın & Murathan, 2024).

Blended learning strategies can be highly effective for skill development. By combining traditional instruction with online resources and interactive activities, blended learning provides opportunities for students to practice and apply their skills in various contexts (Cannon, Lohtia, & Paulich, 2023). Blended learning allows students to practice their skills through online exercises, simulations, and interactive activities. This provides a safe and controlled environment for students to apply what they have learned and receive immediate feedback on their performance (Pramesworo, Fathurrochman, Sembing, Bangkara, & Sudrajat, 2023). Blended

learning can be tailored to the individual needs and skill levels of students. Online assessments and adaptive learning platforms can help identify students' strengths and weaknesses, enabling targeted instruction and practice for specific skill areas (Saini & Baba, 2024). Blended learning often incorporates collaborative activities, such as online group projects, discussion forums, or virtual team-based exercises. These opportunities for collaboration foster teamwork, communication, and problem-solving skills (Kestel & Korkmaz, 2023).

Blended learning can bridge the gap between theoretical knowledge and real-world application. The online resources, case studies, and multimedia materials can provide real-life examples and scenarios, helping students understand how their skills are relevant and applicable in different contexts (Ameloot, Rotsaert, Ameloot, Rienties, & Schellens, 2024). Blended learning platforms can provide immediate feedback to students on their progress and performance. This feedback allows students to reflect on their strengths and areas for improvement, promoting self-directed learning and metacognitive skills (Ameloot et al., 2024). Blended learning provides access to a wide range of resources beyond the traditional classroom setting. Students can explore multimedia content, interactive tutorials, expert interviews, and industry-specific materials that enhance their skill development (Shoukat et al., 2024). Blended learning can support mastery-based approaches, where students progress at their own pace and demonstrate competency before moving on to the next skill or topic. The online modules and assessments enable students to review and practice skills until they achieve mastery (Hill & Smith, 2023). Blended learning strategies offer a dynamic and flexible environment for skill development, combining the benefits of face-to-face instruction with the advantages of online resources and activities. By providing opportunities for practice, personalization, collaboration, and real-world connections, blended learning can effectively foster the development of various skills in students (Usama, 2023).

Review of Literature

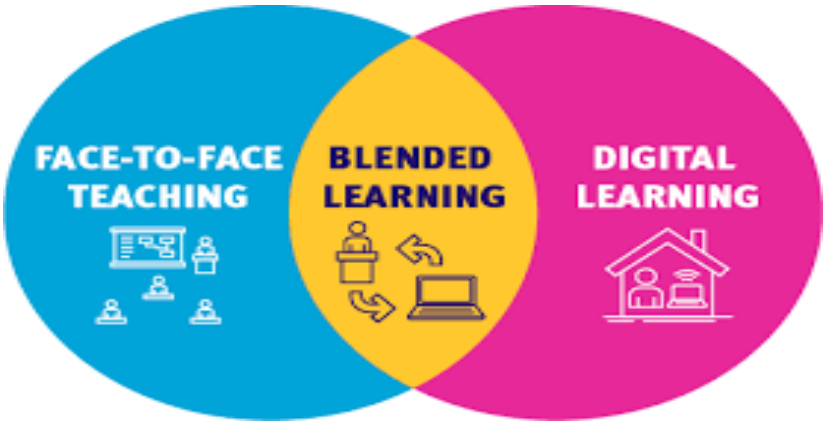
Blended learning is a methodology for teaching and learning that combines educational resources, online communication technology, and opportunities for collaboration with traditional classroom teaching approaches (Ameloot et al., 2024). Blended learning requires the physical presence of teachers and students who have a regular degree. There are generally three forms of blended learning: the flipped classroom model, interactive ideal model, and flexible or adaptive model. The primary aim of blended learning is to enhance accessibility learning resources and cater to the dynamic needs of human interaction in learning experiences. Blended learning strategies ensure that students are actively engaged in achieving personalized learning experiences based on their individual achievements (Sterner, Sköld, & Andersson, 2023).

Although the words blended education and mix education have same meaning but there is great difference in the sense of blended education and mix education Blended learning usually uses apps mainly available programs to teach concepts to allow students to engage in material and on their own place. It can promote improved and better learning & reduces bump to improve the

student satisfaction and motivation and teacher can become more engaged for their students (Anthonysamy, Koo, & Hew, 2020). However, it is important not to overlook the disadvantages and cognitive load associated with the digital components and student control in blended learning. Additionally, teamwork plays a crucial role in effective learning (Dorji & Dorji, 2024). It enables course participants to collaborate and engage in a meaningful way. (Ożadowicz, 2020). the learners to work in a team way and engage in discussion provide successful feedback to one another through a coaching and which undoubtedly leads to improved higher engagement (Al Musawi & Ammar, 2021).

New trends in the blended model and some teacher may start overloading and over delivering the content to the educational learners and the much more educational activities (Adel & Dayan, 2021). Blended learning is not only simply mixing the technology and teaching strategies but it is the mix model approach both face to face instructions let learning online teacher communicate (Brenya, 2024). It also is not including the course changes but simply analog-to-digital ones and the best engagement of the learners to get their motivation and they can achieve a better skills and better concept in a deep.

Blended Learning Model



Source: Megahed & Hassan, (2022), Ackworth Mill Dam School and Our-website (2022)

Blended learning is an educational strategy that utilizes multiple teaching methods to enhance learner effectiveness (Anthonysamy et al., 2020). It recognizes that no single method can accomplish everything on its own. In most classes, blended learning combines traditional classroom instructional methods with digital learning and technology (Anthonysamy et al., 2020). The primary goal of blended learning strategies is to engage students effectively. This is achieved by leveraging virtual class meetings, fostering collaborative work, creating a sense of purpose and goal-setting for students, facilitating differentiated instruction through online work, and utilizing mobile learning for enhanced student facilitation (Megahed & Hassan, 2022).

Blended learning and online teaching strategies have introduced new patterns of educational

approaches, surpassing traditional methods (Zhang et al., 2022). Motivation, accountability, time management, and confidence are fundamental components that can be addressed through course materials and student demonstrations (Egara & Mosimege, 2024). One of the advantages of blended learning is that students are less likely to forget homework materials (Megahed & Hassan, 2022). It also reduces social anxiety through flexible planning and opportunities, promotes student health and safety, and provides accessible learning from the comfort of one's own space without the need for commuting. It allows students to work more effectively with typical work schedules (Tupas & Linas-Laguda, 2020).

There are various ways for students to engage in blended learning. They can allocate dedicated time and gather necessary materials for individual classes. Students are empowered to initiate conversations and participate in hands-on activities (Nerantzi, 2020). Blended learning also facilitates discussions, hands-on lessons, and supervised lab activities (Maghfiroh, Unaiziah, Mustikawati, & Susilowati, 2024). Teachers can provide individualized support and address the additional needs of students (Shamsuddin & Kaur, 2020)

Research objectives

The objectives of the study were:

- To determine the effect of blended learning strategies on higher order thinking of university students in south punjab.

Research questions

1. Is there any the effect of blended learning strategies on higher order thinking of university students in south punjab?

Research Methodology

The study was a survey and descriptive in nature. A quantitative as well as qualitative (QUAN-qual) explanatory method was adopted. The population of the study consisted of Heads of Departments (HoDs), faculty members, and students in Punjab. The sample was selected using multistage cluster sampling. The Punjab province was divided into three clusters, and a representative sample was drawn from each cluster. In total, 12 universities from three divisions (Bahawalpur, Multan, and D.G. Khan) were selected as the sample for the study. The sample included all 48 HoDs, 96 faculty members, and 912 students from the selected universities in southern Punjab. The total sample of the study comprised 1056 respondents. A questionnaire was developed for data collection. The questionnaire was validated through the opinions of concerned experts, faculty members, senior academicians, and research scholars. The reliability of the questionnaire was calculated through SPSS-24 using Cronbach's Alpha. The reliability value was calculated as 0.859, showing that the questionnaire was reliable. The questionnaire was administered for data collection properly after ensuring its validity and reliability. The

researcher personally visited the selected universities and collected the desired data from the respondents. The collected data was arranged and fed into the data sheet. Furthermore, the data was analyzed through SPSS-24 using relevant statistical formulas.

Data Analysis

Part-I: Quantitative

Table 1. I understand the arguments and beliefs of others through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty members	*f*	1	4	11	44	36	96	.858	4.15	.317	.387	.002
	%	1.0	4.2	11.5	45.8	37.5	100%					
Students	*f*	15	16	14	653	214	912	.671	4.13			
	%	1.6	1.8	1.5	71.6	23.5	100%					
Total	*f*	16	20	25	697	250	1008	0.7645	4.14			
	%	1.3	3	6.5	58.7	30.5	100%					

Table.1 presents that the blended learning to help students develop their speaking skills. According to data 89.2% (58.7 Agreed and 30.5 strongly agreed). While 6.1% (3% disagreed and 1.3% strongly disagreed) whereas 6.5% of respondents undecided. The mean score 4.14 and standard deviation 0.764 supported the results. The value .317 showed a positive correlation. The value of regression .387 supported. The value of level of significance 002 also supported.

Table.2. I encourage open mindedness to change through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty members	*f*	1	2	8	42	43	96	.718	4.32	.277	.050	.006
	%	1.0	2.1	8.3	44.8	43.8	100%					
Students	*f*	1	2	3	494	412	912	.498	4.46			
	%	1.0	2.0	3.1	.54.3	39.6	100%					
Total	*f*	3	3	11	505	486	1008	0.608	4.39			
	%	1	2.05	5.7	49.55	41.7	100%					

Table.2 presents that the blended learning to help students develop their speaking skills. According to data 91.25% (49.55 Agreed and 41.7 strongly agreed). While 3.05% (2.05% disagreed and 1% strongly disagreed) whereas 5.7 % of respondents undecided the mean score 4.39 and standard deviation 0.608 supported the results. The value .277 showed a positive correlation. The value of regression 0.50 supported. The value .006 (level of significance) supported.

Table.3. I avoid to making fooling decision personally through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty	*f*	1	2	8	31	53	96	.740	4.44	.366	.350	00

member	%	1	2.1	8.3	32.3	56.3	100%		
Students	*f*	2	3	5	483	419	912	.501	4.47
	%	2	3.1	5.1	46.8	43.0	100%		
Total	*f*	3	3	11	505	486	1008	0.620	4.45
	%	1.5	2.6	6.7	39.5	49.6	100%		

Table.3 presents that the blended learning to help students develop their speaking skills. According to data 89.2% (39.55 agreed and 49.65 strongly agreed). While 4.1% (2.6% disagreed and 1.5% strongly disagreed) whereas 56.7% of respondents undecided. Mean score 4.455 and standard deviation 0.620 supported. The value .366 showed a positive correlation. The value of regression .350 supported. The value .000 (level of significance) also supported.

Table.4. I make promotes good decisions on importance social and economic issues through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty members	*f*	3	3	3	37	50	96	.925	4.33	.249	.384	.014
	%	3.1	3.1	3.1	38.6	52.1	100%					
Students	*f*	2	1	3	489	417	912	.505	4.46			
	%	2.1	1.0	3.1	49.6	44.2	100%					
Total	*f*	3	3	11	505	486	1008	.715	4.395			
	%	2.6	2.05	3.1	44.1	48.1	100%					

Table.4 presents that the blended learning to help students develop their speaking skills. According to data 92.25% (44.1 agreed and 48.15 strongly agreed). While 4.65% (2.05 % disagreed and 2.6% strongly disagreed) whereas 3.1 % of respondents undecided. Mean score 4.395 and standard deviation 0.715 supported. The value 0.249 showed a positive correlation. The value of regression .384 supported. The value of level of significance .014 also supported.

Table.5. I collect sufficient information through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty member	*f*	3	4	4	30	55	96	.996	4.30	.242	1.10	.018
	%	3.1	4.1	4.2	31.3	57.3	100%					
Students	*f*	2	5	6	480	419	912	.502	4.47			
	%	2.1	5.1	6.2	44.6	42.0	100%					
Total	*f*	5	9	10	510	474	1008	.749	4.38			
	%	2.6	4.6	5.2	37.95	49.6	100%					

Table .5 presents that the blended learning to help students develop their speaking skills. According to data 87.2% (37.55 Agreed and 49.65 strongly agreed). While 7.2% (4.6% disagreed and 2.6% strongly disagreed) whereas 5.2% of respondents undecided. Mean score 4.38 and standard deviation 0.749 supported. The value .242 showed a positive correlation. The value of regression 1.10 supported. The value 0.18 (level of significance) also supported.

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Table.6. I make sure students internal collaboration through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty member	*f*	3	2	4	30	57	96	.914	4.42	.183	.216	.074
	%	3.1	2.1	4.2	31.3	59.3	100%					
Students	*f*	1	1	1	505	404	359	.497	4.44			
	%	1.0	1.0	1.0	54.7	42.3	100%					
Total	*f*	4	3	5	535	461	1008	0.70	4.43			
	%	2.05	1.55	2.6	43	50.8	100%					

Table.6 presents that the blended learning to help students develop their speaking skills. According to data 93.8% (43 Agreed and 50.8 strongly agreed). While 3.6% (1.55% disagreed and 2.05% strongly disagreed) whereas 2.6% of respondents undecided. Mean score 4.43 and standard deviation 0.70 supported the results. The value of correlation was .183, showed a positive correlation. The value of regression .216 supported. The value .074 of significance also supported.

Table.7. I make sure students external collaboration through blended learning

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty member	*f*	2	4	1	35	54	96	.878	4.41	.203	.099	.047
	%	2.1	4.2	1.0	36.5	56.2	100%					
Students	*f*	1	5	3	494	409	912	.498	4.45			
	%	1.0	5.1	3.1	50.4	40.4	100%					
Total	*f*	3	9	4	529	463	1008	0.688	4.43			
	%	1.55	4.65	2.05	43.45	48.3	100%					

Table.7 presents that the blended learning to help students develop their speaking skills. According to data 91.75% (43.45Agreed and 48.3 strongly agreed). While 36.2% (4.65% disagreed and 1.55% strongly disagreed) whereas 2.05% of respondents undecided. Mean score 4.43 and standard deviation 0.688 supported. The value .203 showed a positive correlation. The value of regression 0.99 supported. The value 0.47 of significance supported.

Table.8. I am flexible for students and teachers

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty members	*f*	1	2	3	34	56	96	.754	4.48	.083	.099	.419
	%	1.0	2.1	3.1	35.4	58.4	100%					
Students	*f*	1	1	1	504	405	912	.502	4.42			
	%	1.0	1.0	1.0	52.6	44.4	100%					

Total	*f*	2	3	4	538	461	1008	0.628	4.45
	%	1	1.55	2.05	44	51.4	100%		

Table.8 presents that the blended learning to help students develop their speaking skills. According to data 95.4% (44Agreed and 51.4 strongly agreed). While 2.55% (1.55% disagreed and 1% strongly disagreed) whereas 2.05 % of respondents undecided. Mean score 4.45 and standard deviation 0.628 supported. The value .083 showed a positive correlation. The value of regression .099 supported. The value .419 of level of significance also supported.

Table.9. I take new blended learning module in the future.

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty members	*f*	1	4	6	44	41	96	.719	4.41			
	%	1.0	4.1	6.2	45.7	43.0	100%					
Students	*f*	2	2	2	501	405	912	.497	4.44	.073	.864	.481
	%	2.1	2.1	2.1	52.2	41.5	100%					
Total	*f*	3	6	8	545	446	1008	0.608	4.425			
	%	1.55	3.1	4.15	48.95	42.25	100%					

Table.9 presents that the blended learning to help students develop their speaking skills. According to data 91.2% (48.95Agreed and 42.25 strongly agreed). While 4.65% (3.1% disagreed and 1.55% strongly disagreed) whereas4.15 % of respondents undecided. Mean score 4.425 and standard deviation 0.608supported the results. The value .073 showed a positive correlation. The value of regression 0.864 supported. The value .481 of level of significance supported.

Table.10**.** I communicate and discussion with students in group conference mode

RSP	Stat.	Responses						σ	μ	r	R	α
		SDA	DA	UD	A	SA	Total					
Faculty members	*f*	2	8	4	38	44	96	1.004	4.21			
	%	2.1	8.3	4.2	37.5	47.9	100%					
Students	*f*	2	1	5	512	392	912	.504	4.43	.229	.717	.225
	%	2.1	1.0	1.0	56.8	39.1	100%					
Total	*f*	4	9	9	550	436	1008	0.754	4.32			
	%	2.1	4.65	2.6	47.15	43.5	100%					

Table.10 presents the blended learning to help students develop their speaking skills. According to data 90.65% (47.15Agreed and 43.5 strongly agreed). While 6.75 % (4.65% disagreed and 2.1% strongly disagreed) whereas 2.6% of respondents undecided. Mean score 4.32 and standard deviation 0.754 supported. The value .229 showed a positive correlation. The value of regression .717 supported. The value .225 of level of significance supported.

Part-II: Qualitative (Interview of Departmental Heads)

An interview schedule was designed and used to collect responses from HoDs of university level

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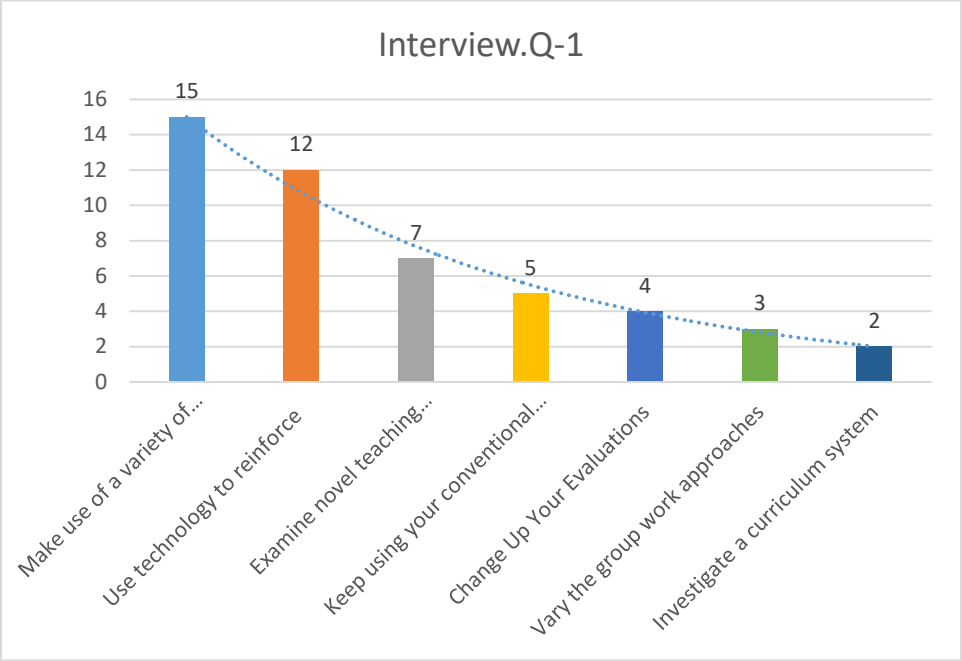
respondents were interviewed and their responses were as follows:

Q.1: Which blended learning technique can you use in your classroom per question?

The question was asked from heads they told that make use of a variety of instructional materials, use technology to reinforce your efforts, examine novel teaching approaches, keep using your conventional teaching strategies, and change up your evaluations, vary the group work approaches, and investigate a curriculum system.

Fingure.1



Fingure.1 showed that majority of respondent were viewed about use of variety of instructional materials. Make use of a variety of instructional materials, then were of viewed use technology to reinforce your efforts and examine novel teaching approaches.

Q.2 How May Blended Learning Is Made Better?

Fingure.2

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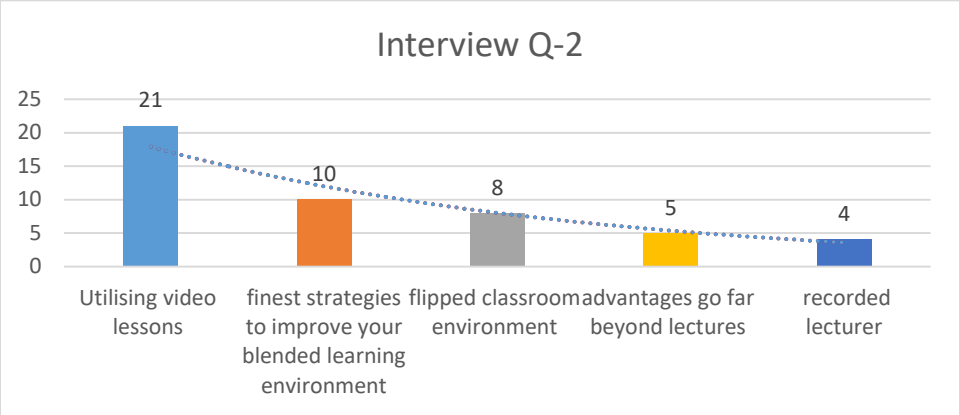
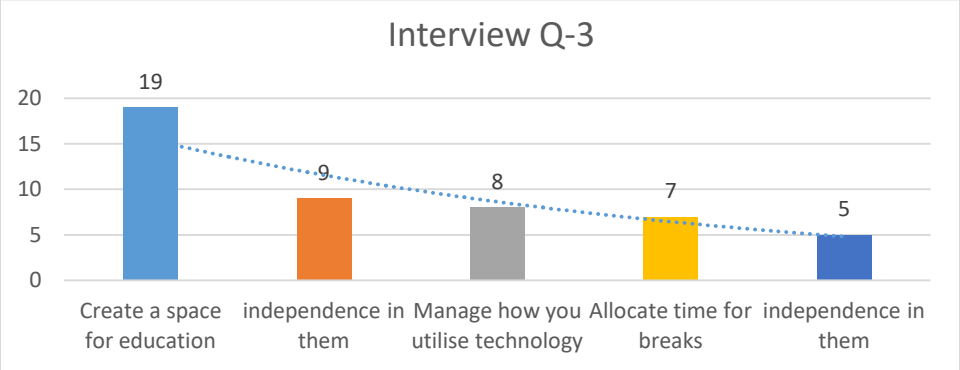


Fingure.2 showed that majority of responded suggested that blended learning can be improved by utilizing video lessons, then were of view of finest strategies to improve the success of your blended learning environment, some of suggested to create the flipped classroom environment

Q.3: What obstacles can blended learning overcome?

The respondents were of the view that they create a space for education. Giving your children a private, distraction-free environment to study is the first step, establish a reliable regimen, independence in them, manage how you utilize technology and allocate time for breaks.

Fingure.3



Fingure.3 showed that majority of respondents suggested creating a space for education, and were of the view that technology should be managed and utilized.

Q.4. How can students be inspired in blended learning?

There are a number of things that can boost students' motivation for learning: Meaning, modelling, open communication, a requirement, novelty, practice/practice actively and meaningfully, split exercise, systematic reduction of learning compulsion, and favorable conditions all come into play.

Fingure.4

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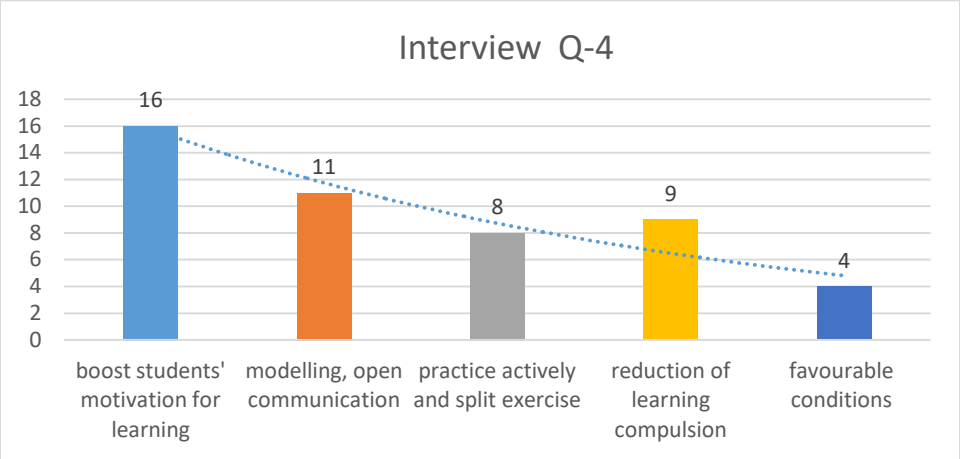
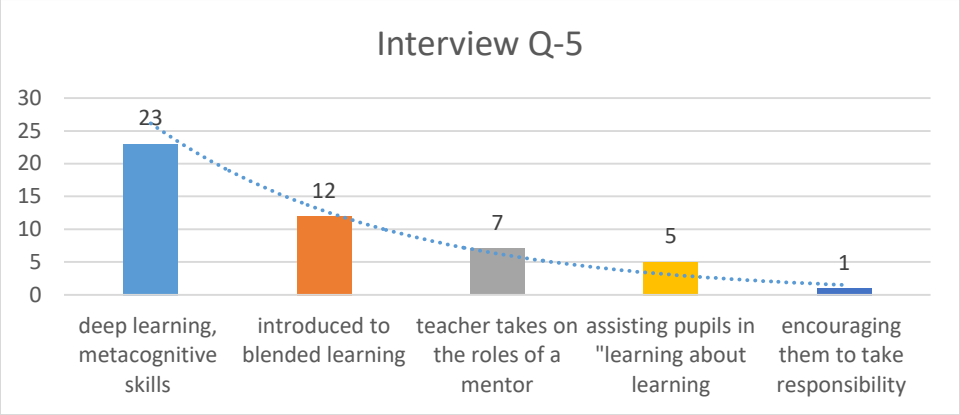


Fingure.1 showed that majority of respondents suggested various ways to boost students' motivation for learning, providing meaning, modelling, open communication, setting requirements, and were of view introducing novelty, practicing actively and meaningfully, breaking down exercises into smaller parts, systematically some of suggested to reducing learning compulsion, and creating favorable conditions.

Q.5 What Functions Do Educators Play in Blended Learning?

Because they are necessary for deep learning, metacognitive skills are frequently the first to be taught to students when they are introduced to blended learning. In these circumstances, the teacher takes on the roles of a mentor, coach, adviser, and supporter, assisting pupils in "learning about learning" and encouraging them to take responsibility for their own achievement.

Fingure.5



Fingure.5 showed that majority of respondents suggested the metacognitive skills are necessary for deep learning and should be frequently taught to students, especially those introduced to blended learning, then were of viewed to the teacher takes on the roles of a mentor, coach, adviser, and few supporters, assisting pupils in 'learning about learning' and encouraging them to

take responsibility for their own achievement.

Findings

- 89.2% of respondents agreed that blended learning strategies help understand the arguments and beliefs of others, while 6.1% disagreed, and 6.5% of respondents were undecided. The mean score of 4.14 and standard deviation of 0.764 supported the results. The correlation value was 0.317, showing a positive correlation. The regression value of 0.387 supported the results, with a significance level of 0.002.
- 91.25% of respondents agreed that blended learning strategies encourage open-mindedness to change, while 3.05% disagreed, and 5.7% of respondents were undecided. The mean score of 4.39 and standard deviation of 0.608 supported the results. The correlation value was 0.277, showing a positive correlation. The regression value of 0.50 supported the results, with a significance level of 0.006.
- 89.2% of respondents agreed that blended learning strategies help avoid making foolish decisions personally, while 4.1% disagreed, and 6.7% of respondents were undecided. The mean score of 4.455 and standard deviation of 0.620 supported the results. The correlation value was 0.366, showing a positive correlation. The regression value of 0.350 supported the results, with a significance level of 0.000.
- 92.25% of respondents agreed that blended learning promotes good decision-making on important social and economic issues, while 4.65% disagreed, and 3.1% of respondents were undecided. The mean score of 4.395 and standard deviation of 0.715 supported the results. The correlation value was 0.249, showing a positive correlation. The regression value of 0.384 supported the results, with a significance level of 0.014.
- 87.2% of respondents agreed that faculty members collect sufficient information through blended learning, while 7.2% disagreed, and 5.2% of respondents were undecided. The mean score of 4.38 and standard deviation of 0.749 supported the results. The correlation value was 0.242, showing a positive correlation. The regression value of 1.10 supported the results, with a significance level of 0.18.
- 93.8% of respondents agreed that faculty members ensure students' internal collaboration through blended learning, while 3.6% disagreed, and 2.6% of respondents were undecided. The mean score of 4.43 and standard deviation of 0.70 supported the results. The correlation value was 0.183, showing a positive correlation. The regression value of 0.216 supported the results, with a significance level of 0.074.
- 91.75% of respondents agreed that faculty members ensure students' external collaboration through blended learning, while 3.62% disagreed, and 2.05% of respondents were undecided (Note: The percentage of respondents who disagreed seems to be incorrect, as it is mentioned as 36.2% earlier). The mean score of 4.43 and standard deviation of 0.688 supported the results. The correlation value was 0.203, showing a positive correlation. The regression value of 0.99 supported the results, with a

significance level of 0.47.

- 95.4% of respondents agreed that blended learning is flexible for students and teachers, while 2.55% disagreed, and 2.05% of respondents were undecided. The mean score of 4.45 and standard deviation of 0.628 supported the results. The correlation value was 0.083, showing a positive correlation. The regression value of 0.099 supported the results, with a significance level of 0.419.
- 91.2% of respondents agreed that faculty members would adopt new blended learning modules in the future, while 4.65% disagreed, and 4.15% of respondents were undecided. The mean score of 4.425 and standard deviation of 0.608 supported the results. The correlation value was 0.073, showing a positive correlation. The regression value of 0.864 supported the results, with a significance level of 0.481.
- 90.65% of respondents agreed that faculty members communicate and discuss with students in group conference mode, while 6.75% disagreed, and 2.6% of respondents were undecided. The mean score of 4.32 and standard deviation of 0.754 supported the results. The correlation value was 0.229, showing a positive correlation. The regression value of 0.717 supported the results, with a significance level of 0.225.

Conclusion

This study concluded that a majority of respondents agreed with the use of blended learning strategies to understand the arguments and beliefs of others, while a few disagreed, and some remained undecided. The collective response from faculty members indicated a preference for using blended learning to understand differing viewpoints, with the mean score, standard deviation, regression analysis, and level of significance supporting these results. Furthermore, most respondents agreed that blended learning strategies, which encourage open-mindedness and receptivity to change, help learners develop receptive skills. A few respondents disagreed, while some remained undecided. Overall, faculty members have embraced blended learning to foster open-mindedness, as supported by the mean score, standard deviation, regression analysis, and level of significance. Additionally, a significant number of respondents agreed with the statement that blended learning helps avoid making foolish decisions on a personal level, while a few disagreed, and some remained undecided. Faculty members collectively suggest blended learning as a means to prevent poor decision-making, with the mean score, standard deviation, regression analysis, and level of significance supporting this finding. Moreover, the majority of respondents agreed that faculty members should utilize blended learning strategies to promote informed decision-making on social and economic issues. A few respondents disagreed, while some remained undecided. The mean score, standard deviation, regression analysis, and level of significance all supported the conclusion that most faculty members advocate for the use of blended learning in this context. Additionally, most respondents agreed that faculty members should encourage learners to gather sufficient information through blended learning, while a few disagreed, and some remained undecided. Faculty members have collectively implemented

strategies to facilitate learners in acquiring adequate information through blended learning, as supported by the mean score, standard deviation, regression analysis, and level of significance.
The survey results also indicated that most respondents believe blended learning strategies are effective in ensuring internal collaboration among students. Majority of faculty members practice blended learning to promote internal collaboration among students, with the mean score, standard deviation, regression analysis, and level of significance supporting this outcome. Similarly, most respondents agreed that blended learning strategies are beneficial for promoting external collaboration among students, while a few disagreed, and some remained undecided. Faculty members actively employ blended learning strategies to foster external collaboration among students, as supported by the mean score, standard deviation, regression analysis, and level of significance. Furthermore, the majority of respondents agreed that blended learning provides flexibility for both students and teachers, while a few disagreed, and some remained undecided. Faculty members utilize blended learning to create a flexible learning environment for students and teachers, as supported by the mean score, standard deviation, regression analysis, and level of significance. A significant number of respondents expressed their willingness to adopt new blended learning modules in the future, while a few disagreed, and some remained undecided. Most faculty members have already embraced or are open to adopting new blended learning modules, as supported by the mean score, standard deviation, regression analysis, and level of significance. Lastly, the majority of respondents agreed that faculty members should communicate and engage in discussions with students through group conference modes. A few respondents disagreed, while some remained undecided. Faculty members actively employ group conference modes for communication and discussions with students, as supported by the mean score, standard deviation, regression analysis, and level of significance.

Recommendations

- Flipped classroom model may be adopted so that students review online materials, such as videos or readings, before coming to class. Class time is then used for interactive discussions, group work, and hands-on activities that reinforce and apply the online content.
- Online discussions and collaborative projects may be preferred to facilitate student interaction and teamwork. This can include group projects, case studies, and problem-solving activities that promote communication and collaboration among students.
- Multimedia presentations and simulations may be used to engage students and provide them with immersive learning opportunities. This can enhance their understanding of complex concepts and foster critical thinking skills.
- Online platforms or learning management systems may be adopted to provide personalized learning paths for students, tailoring the learning experience to individual student needs. This allows them to progress at their own pace and receive targeted

support and resources.

- Gamified elements and interactive assessments may be integrated into the online learning experience to motivate students, make learning more enjoyable, and provide immediate feedback on their progress.
- Assessments that combine online and offline components may be designed to evaluate student learning, including online quizzes, projects, presentations, and traditional assessments. This allows for a comprehensive evaluation of students' knowledge and skills. By implementing these research recommendations, educators can create an effective online learning environment that promotes student engagement, motivation, and academic success.

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