Faculty Members Attitudes Towards Blended Learning: A Case Study of Jordanian Universities

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ARTICLE INFO	ABSTRACT
	This study aimed to reveal faculty members' attitudes towards blended learning in Jordanian universities. This research adopted a descriptive approach and developed a questionnaire for data collection, which was distributed to a sample of 130 faculty members from Jordanian public universities to achieve the study's objectives. The results revealed a high overall trend, indicating positive and favorable attitudes among faculty members towards "blended learning," with an average score of 3.70 and a standard deviation of 0.54. Additionally, the findings highlighted several challenges in using technology for blended learning, with the general "arithmetic mean" for this trend being 3.72 and a "standard deviation" of 0.52.

Introduction

We are in an era marked by a vast expansion of knowledge, the information revolution, and globalization. It is a period of rapid advancement, breakthroughs, and technological innovation. The widespread use of modern technologies in nearly every sector has become a defining aspect of life, leading education professionals to acknowledge the pressing need to reassess the educational system and incorporate technology. This integration helps provide learners with the knowledge and skills needed to enhance their critical thinking. Furthermore, it also helped them in processing the increasing scientific knowledge in academia as learning has gone beyond the four-walls of the university classrooms. According to Shroukh (2023), e-learning has transformed higher education from onsite (on campus) to online (distance learning). "E-learning have increased the effectiveness of learning, shortened the time required for training, reduced the cost of learning, and it shows the great diversity in e-learning environments and leaves wide options for learners when using it with organized strategies. Thus, this is with clear and pre-coordinated specific steps, which helps in achieving educational goals. All this is reflected on the student, by making him play an essential role in the educational process within the lecture room. It also helps in developing the skills of research, investigation and discovery, and to identify causal relationships, reasoning, decision-making, and judgment in light of the availability of sufficient evidence. Thus, the use of modern methods in teaching, which are student-centered, by making it the focus of the educational process, enables him to keep pace with development in the world of knowledge and blended learning (Blended Learning)." This is one of the strategies that garnered considerable attention from educators, which included more direct delivery in the lecture hall, computer communication, and self-learning (Vaughan, 2007).

Shumli (2007) believes that blended learning is a complement to the usual teaching methods, and a tributary to lecture-based education. As a promising approach to enhance learning experience,

blended learning has gained significant attention in recent years (Tong et al., 2022; Angwaomaodoko, 2024). According to Almousa et al. (2023), blended learning meets the need of both online and onsite students at the same time; and it is "characterized by the presence of an interactive educational environment" (p. 2600). Lynna (2004) believes that blended learning is what a faculty member engages in during a lecture when using PowerPoint presentation on a computer system. This is in addition to the usual classroom methods, which is aimed at providing a set of skills to a number of learners. Rasmussen (2003) opinioned that blended learning is a mixture of computer learning with regular learning, and is described as (hybrid) learning, which is learning that supports communication between participants, bridges distances between them, and solves many problems related to learners.

In blended learning, the usual and e-learning modes are integrated, and this strategy combines the advantages of e-learning and regular education. This emphasizes "the importance of the faculty member and his role in investing students' abilities, tendencies and preparations, which aims to achieve the aspirations of society." Therefore, the "use of blended learning in universities, identifying its methods, components and foundations on which it is based, and designing its own educational situations" has become one of the things that faculty members in universities have begun. Some universities have sought to create the appropriate conditions for the "practice of this strategy by faculty members". As a result, they have equipped lecture halls with computers, datashows, and smart boards, thereby overcoming the physical, human, and technological obstacles.

This form of education encounters several challenges, including material difficulties related to the preparation of devices, materials, tools, and the need to equip classrooms with modern technological devices to facilitate its implementation. Consequently, this is in addition to the "administrators of the deans, their deputies, assistants and heads of departments, and their readiness to provide the appropriate environment for the application of this type of education." As previously stated, this study came "to investigate the attitudes of faculty members" in Jordanian universities towards the adoption of this type of education in universities.

Study Problem and Questions

In light of the information revolution and technological progress, the stereotypical teacher no longer has the ability to apply interactive information and communication technologies and provide an interactive learning environment with multiple sources. The need has emerged for a new teaching method that combines the advantages of e-learning and the advantages of traditional education, through which information, attitudes, and educational experiences are organized through multimedia provided by modern technologies and information technology (Shumli, 2007). The role of the learner is no longer a receiver and store of information, as in banking learning, but rather participates in the "learning and teaching process," because the learner is the focus of this process.

Therefore, e-learning is used by faculty members as a strategy to develop the skills and academic performance of their students, and to develop research, investigation, skills for investigating. Furthermore, it is a means to develop the skills and professional abilities of the faculty member.

"Identifying the methods used in blended learning and its components, the foundations on which it is based, and designing its own educational situations is necessary to qualify faculty members and teachers to deal with this type of education." People who are cognizant with the recent educational trend in most of our universities will observe that the study and curricula plans have been developed, but teaching methods have not undergone the required change. Hence, this paper, whose problem has been determined, is focused on answering the main study question:

"What are the attitudes of faculty members in Jordanian universities towards the application of blended learning, and what difficulties do they face in doing so?"

From the main study question, the following sub-questions emerged from it:

Q1: "What are the attitudes of faculty members in Jordanian universities towards blended learning?"

Q2: "What are the difficulties facing the application of blended learning from the point of view of faculty members?"

Importance of the Study

The integration of technology into "university education" faces numerous challenges, including those at the "college or university level". This study focuses on the attitudes of faculty members in Jordanian universities towards blended education, and its significance lies in the following:

– Identifying the challenges faculty members face in universities when using the blended learning strategy, and working to overcome and address these challenges through the relevant authorities.

– Encouraging those responsible for developing plans and programs in universities to incorporate the blended learning strategy into these plans, ensuring alignment with technological advancements, and making university blended education more engaging and effective for students.

– Keeping pace with modern trends in university teaching by experimenting with modern models, methods, and strategies that lead to positive results that contribute to raising the level of blended education.

– Responsibility is useful in learning about the reality of the university, and in providing material, human, and administrative requirements that help in the application of blended learning within the university.

– Encouraging those in charge of faculty development centers in universities to organize workshops, seminars, and conferences for faculty members to help them reach the required level of technological education through blended learning.

– This study provides an opportunity for researchers and specialists to explore more studies and research on blended learning, its needs, and the latest global trends in this area.

Study Limits and Limitations

This study was limited to the attitudes of faculty members towards blended education in Jordanian universities, in this field, and was limited to faculty members in the faculties of educational sciences in three universities: Mutah, Yarmouk, and Jordan. The study was conducted with the cooperation of the administration of these colleges to complete this study in the first semester of the academic year 2024/2025. The generalization of the results of this study is determined by the two study tools prepared for this purpose (questionnaire), and the extent of the sincerity of the response to these two tools, specifically the psychometric characteristics in terms of honesty and constancy.

Procedural Definitions

Blended learning: Lynna (2004) describes "blended learning as the process by which teachers uses computers in addition to regular classroom methods to provide scientific knowledge to students." Shumli (2007) also believes that blended learning is a mixture of computer-based learning with regular education which is simultaneously and carefully planned. This is done in an advanced manner with the intention of providing ready-made scientific content to be delivered to the student in an easy, fast, and clear manner.

For the purposes of this study, blended learning is an integration between regular learning (lecture style) and e-learning using the computer as a supportive method of traditional learning: lecture, lab, dialogue, and discussion. The role of the learner is no longer limited to listening and receiving ready-made information, but it has become a participant, which is an important focus of the learning process.

Faculty member: They are all those who have been appointed at the university who hold a doctorate degree with the rank of professor, associate professor, assistant professor, or teacher who holds a master's degree and has a teaching quorum at the university ranging from 9 hours to 15 hours.

Development towards blended learning: Attitude towards blended learning refers to an individual's positive perception of this approach, including their willingness to embrace its use in the classroom and their recognition of its significance and value in the educational process. In this study, faculty members' attitudes towards blended learning are assessed based on the scores they achieve through a specially designed questionnaire aimed at measuring these attitudes.

Previous Studies

Educational thought has developed by focusing on the principles and foundations of cognitive theory, and creating meaningful learning for learners by transferring control over the education process from the hands of the teacher to the hands of the learner. This can be achieved through an educational strategy that works to form cognitive structures for learners resistant to forgetting, developing their cognitive levels, and taking into account the emotional, cognitive, and skill aspects they have. Therefore, e-learning appeared by focusing on the use of advanced technology in the teaching and learning process. Over time, as a result of the shortcomings that appeared in the strategies, E-learning, specifically in the field of teacher-learner interaction, blended learning has emerged. Here, direct interaction takes place between the teacher and the learner, combining traditional education and e-learning (Vaughan, 2007).

In this regard, a number of researchers addressed this type of strategy in the field of blended science and the use of e-learning. It can be limited to the following studies:

The study conducted by Kagima et al. (2000) aimed to investigate students' attitudes and beliefs towards blended learning in a Russian university (The National Research University Higher School of Economics). The study sample consisted of (56) students which were randomly selected. Also, the researchers used descriptive and semi-experimental research, and the questionnaire as a study tool to measure trends. The results showed that there is a positive trend among students towards this type of education, and it also recommended studying the need to apply blended learning.

The study conducted by Emelyanova (2017) aimed to investigate the extent of participation of secondary school students in New Zealand in teaching a subject that adopted blended learning, and its impact on the cognitive, skill, and emotional fields. The study lasted a period of four weeks, with a study population of 1000 students from the twelfth year students in New Zealand. The researcher adopted interviews, questionnaire and observation, and the results showed the effectiveness of blended learning and recommended its use at the secondary stage.

Qabbani (2010) conducted a study entitled "The Extent to which Faculty Members at Salman bin Abdulaziz University Apply Smart Boards in Developing an Educational Environment," using a questionnaire as a tool to study "the quality of using smart boards, identify the difficulties they face, and prevent them from using them." The study sample consisted of 200 faculty members who were randomly selected, and the results showed that a large percentage of faculty members agreed on the importance of using smart boards, specifically in lesson presentations and key points through data projector. However, most of the sample members agreed on the ineffectiveness of its use, and that it was not used to shift from teacher-centered learning (faculty member) to student-centered learning. In addition, the percentage of its contribution to cooperative learning is very small, and the most prominent difficulties received are related to the scarcity of necessary hardware and software, poor technical support, and weak or scarce training programs at the university.

The study of Aldhiyabat (2013) aimed to investigate the impact of both blended learning and the traditional method on the achievement of Tafila Technical University students in the subject of teaching methods and their attitudes towards it. Also, the study population consisted of students of the Faculty of Education in the disciplines of child education and classroom teacher in the academic year (2010/2011). The study sample consisted of two experimental groups of (30) male and female students and another control group and includes (28) male and female students. The experimental group students studied using blended learning, while the control group students studied using the traditional method. The results showed that the experimental group students outperformed the control group students in the areas of achievement and attitudes towards blended learning.

Nashwan (2011) study is aimed at investigating the impact of blended learning on the acquisition of the skills of using e-learning in education for secondary school teachers. The study community consisted of 376 teachers from the province of Qurayyat secondary school, while the study sample reached 40 teachers selected intentionally and distributed into two groups: the experimental group, which received training in a blended learning method, and the control group, which was trained using traditional methods. Each group consisted of 20 teachers. The researcher employed a cognitive test and a skill performance checklist, which were applied to the two groups before and after the training. The results showed the superiority of the members of the experimental group over the members of the control group in the cognitive test and skill performance for both browsing or searching for information and the design of web pages.

The study by Al-Harthy et al. (2012) aimed to investigate the impact of using the blended learning strategy on developing skills and attitudes towards its use in the College of Educational Sciences at Um Al-Qura University. The researcher used the semi-experimental approach consisting of two experimental groups and another control group. The researcher used the observation card and the questionnaire as study tools. In addition, the study sample reached 31 students in the experimental group and 36 students in the control group of diploma students who enrolled in learning technology. The results showed the superiority of female students in the experimental group over the students in the control group, and the researcher recommended the adoption of the blended learning strategy.

The study of Qashari (2004) dealt with the most prominent challenges facing the use of blended learning in university learning from the point of view of faculty members and their assistants at Alexandria University. The researcher used the descriptive analytical program as a study tool that she applied to a random sample of faculty members and their assistants in theoretical and practical faculties through observation and interview. The results showed a set of challenges facing this type of learning, and it also showed that there was no statistically significant difference attributed to both gender and experience.

Abu Musa et al. (2010) investigated the impact of a blended learning training programme on teachers' ability to design and produce educational media. The training program is focused on enabling teachers to adapt to the proposed education program, producing electronic educational media and tests. Using the interactive board, he experimented with the program over a period of 3 years, and the study sample reached 120 teachers. The results showed the success of the training program in bridging the gap between pedagogy and technology, as well as in enbaling individual to take responsibility towards the production and development of educational media.

Ghanem (2009) conducted a study aimed at investigating the impact of using the blended learning strategy in social work in Tulkarem area on the achievement of those enrolled in the program at Al-Quds Open University. The total members of the study population were 256 male and female students. A random sample of 42 male and female students was selected. 24 male and female students represented the experimental group, while the number of members of the control group who studied in the traditional method was 18 male and female students. The researchers used the achievement test as a tool in this study. Thus, the results showed the superiority of the experimental group who studied using blended learning over the students of the control group. In addition, the study also recommended the use of the blended learning strategy.

The study of Abdul Aleati et al. (2010) aimed to "investigate the impact of the use of blended training on the development of some computer skills among primary school teachers in the Sultanate of Oman compared to traditional training. The study sample consisted of 48 teachers who were distributed into two experimental groups and another control. The researchers used the achievement test, the skill performance test, and the observation card as study tools. The results showed that the experimental group members outperformed the control group members in cognitive achievement and skill performance of most of the skills. The use of computers in blended learning indicates that the

blended training pattern is more influential than the traditional training pattern in skills development."

Al-Ghamlas (2016) conducted a study aimed at investigating the impact of e-learning and blended learning on students' acquisition of multimedia skills. The study sample consisted of 72 male and female students in the Department of Information Technology at Tanta University, Egypt. The study members were randomly distributed into three (3) groups with each of them comprising of 24 male and female students. "The first group studied multimedia using the e-learning strategy, the second group studied using blended learning, and the third group (control group) studied it using the traditional way. The results showed that the students of the two groups that studied using e-learning and the second group that studied using blended learning outperformed the students of the control group in acquiring the skills of developing multimedia programs." Subsequently, there was no statistically significant difference between the students in the control group, who studied in the traditional way, and the students in the two experimental groups, one studying with e-learning and the other with blended learning, in cognitive achievement.

The study of Al-Shihari (2008) also aimed to investigate the degree of faculty members' use of information technologies and the difficulties that hinder their use of them. The study employed the questionnaire as a tool, where the number of members of the study sample reached 176 faculty members. Thus the results showed that the percentage of faculty members' use of technologies in the field of education was low and below average, and that the percentage of them that enrolled in training courses in the field of e-learning amounted to 30.1%. However, there are a number of difficulties and problems they were faced with in using these technologies.

The study carried out by Bitar (2008) dealt with presenting a proposed model for the blended e-learning strategy, identified the skills necessary for its use by faculty members at the Faculty of Education at Assiut University, and examined the most prominent obstacles to its use in teaching. The questionnaire was used as a study tool to investigate the skills needed to use blended learning, and highlighted the difficulties faced by faculty members in applying it. The results showed that the use of this strategy is based on the skills that must be available to faculty members, and it highlighted a set of difficulties facing its implementation. However, these diffulties included technical, administrative, and human obstacles related to the capabilities of faculty members and students as well. The results showed that the program has a positive impact on the development of students' achievement skills in technology among members of the experimental group.

Murad (2013) conducted a study aimed at investigating the extent to which faculty members at the College of Education in Jeddah use computers for educational purposes and the extent to which they benefit from the Internet in the educational process. The questionnaire was used for information collection purposes, and the number of faculty members, as a sample for this study who were randomly selected, reached 933 members. The results showed the percentage of those who use the Internet at home (100%) and while its use decreased during work, the use was limited to facilitating the follow-up of research and studies.

Lynna (2004) at Iowa University of Science and Technology surveyed the extent to which faculty members use electronic information and communications. The study included 167 randomly selected faculty members. The results showed that 51.7% are those who use electronic "information and communication technology" in the educational process. Also, 48.3% of the teaching sample members do not use these technologies, which shows that majority of the sample members use information and communication technology in various aspects related to announcements of study programs, announcement of assignments, mailing lists, preparation of study schedules, and course. It is very rare for them to be used for teaching purposes inside the lecture hall.

Method and Procedure

This research is part of the field research that adopts the survey method to investigate "the attitudes of faculty members in Jordanian universities towards blended learning."

Sample and Study Population

All faculty members in the faculties of educational sciences at Jordanian public universities constituted the study population. Three universities were randomly selected from them in the north, center and south, with one university in each, namely: Yarmouk University, the University of Jordan, and Mutah University. However, their number reached 259 members and Table 1 shows the distribution of faculty members to the three universities.

Table 1. Distribution of Faculty Members in Public Universities

Jordanian Faculties of Educational Sciences

University	Professor	Participant	Assistant	Teacher	Total
Yarmouk	42	38	13	7	100
Mu'tah	24	21	7	5	57
Jordanian	44	31	17	10	102
Total	**110**	**90**	**37**	**22**	**259**

Study Sample

The study sample was selected randomly by relative stratified with a size of 130 members, representing 50% of the study population. It was distributed to all members of the study sample, from which 103 questionnaires were retrieved, representing 79.2% of the questionnaires distributed to the study sample. Eleven (11) questionnaires were excluded for lack of suitability for statistical analysis, leaving 92 questionnaires for analysis, representing 70.8% of the questionnaires distributed to the study sample. This is regarded as an acceptable percentage for scientific research purposes.

Table 2 presents the number of questionnaires collected from each university, along with the percentage of the total distributed questionnaires that were retrieved.

Table 2. Number of questionnaires retrieved and their percentage of distributed questionnaires

University Name	Distributed questionnaires	Questionnaires recovered	Percentage of the questionnaires recovered
Yarmouk	50	35	38%
Mu'tah	29	24	26%
Jordanian	51	33	36%
Total	**130**	**92**	**100%**

Study Tools

After reviewing the group of studies that dealt with the subject of blended education, most of them are focused on blended education in schools and its impact on achievement, students' attitudes towards it, the scarcity of studies that dealt with the application of blended education in universities, and the obstacles facing faculty members in applying it inside the lecture hall. After consulting the opinions of some faculty members at the Hashemite University, Zarqa University, and Amman Arab University to achieve the objective of the study, a questionnaire was prepared to survey the attitudes

of faculty members towards blended learning in Jordanian universities (faculties of education). Another questionnaire was prepared "to investigate the difficulties and issues that prevent the use of this type of strategy (blended education) as well (from the point of view of faculty members) according to the five-pointed Likert scale with the following vocabulary: (to a very large degree, to a large degree, to a medium degree, to a small degree, to a very small degree)." A mark was given to each of them in this order: 5, 4, 3, 2, and 1, if the paragraphs are in the positive direction. However, if the paragraphs are in the negative direction, "the degrees are reversed to become: 1, 2, 3, 4, and 5 (to a very large degree, to a large degree, to a medium degree, to a small degree, to a very small degree)." In addition, the trend survey questionnaire consisted of 20 paragraphs distributed over two areas: (i) Technical expertise for faculty members and technical expertise related to students and (ii) Programs, plans and study material. The difficulties survey questionnaires consisted of 25 items also distributed into two areas:

1. Technical, administrative and financial difficulties.
2. Human difficulties related to faculty members.

Stability of the Two Study Tools

The stability coefficient was calculated using the Cronbach alpha formula to ensure internal consistency in the final form. For each variable and its respective dimensions, the stability values were high, all exceeding 0.60. Thus, this indicates the stability and consistency of the tool paragraphs, and the stability coefficient of the variable of difficulties facing the use of technologies in blended learning reached (0.89). In regard to the variable of faculty members' attitudes towards blended learning, the stability coefficient reached 0.90. Thus, these values are acceptable for the purposes of the current study.

Study Results and Discussion

Results Related to the First Question

The first question reads as follows: "What are the attitudes of faculty members in Jordanian universities towards blended learning?"

To answer this question, descriptive and analytical statistical methods were carried out using SPSS Version 16 by using the following statistical methods: frequencies and percentages to describe the characteristics of the study sample, arithmetic averages and standard deviations to answer the questions of the study, and the Pearson's correlation coefficient, as shown in Table 3:

Table 3. Arithmetic Averages and Standard Deviations of Faculty Members' Attitudes towards Blended Learning

Figure	Paragraphs	Arithmetic mean	Standard deviation	Direction	Correlation degree
	I see the need to mainstream blended learning to universities.	3.94	0.82	High	0.819[**]
	Blended learning raises students' motivation to learn.	3.89	0.85	High	0.799[**]
	The presentation of information in a blended learning method is more exciting for students than the traditional presentation.	3.84	0.87	High	0.797[**]
	Blended learning increases the burden on the faculty member.	3.83	0.94	High	0.798[**]
	Blended learning neglects many elements of the	3.82	0.90	High	0.775[**]

educational process.				
Blended learning distracts students.	3.79	0.93	High	0.745(**)
Blended learning develops students' thinking skills.	3.78	0.91	High	0.731(**)
Blended learning increases faculty confidence.	3.77	0.95	High	0.725(**)
Blended learning encourages the use of electronic technologies.	3.75	0.93	High	0.716(**)
Blended learning encourages students to participate in activities.	3.74	0.95	High	0.700(**)
Blended learning helps students to self-evaluate.	3.73	0.95	High	0.696(**)
Students feel comfortable during blended learning.	3.72	0.99	High	0.689(**)
The faculty member feels comfortable in the blended learning program.	3.71	0.97	High	0.674(**)
The use of blended learning hinders the use and development of new strategies.	3.70	0.98	High	0.667(**)
Blended learning does not take into account individual differences.	3.69	0.97	High	0.658(**)
Blended learning speeds up the display of as much information as possible.	3.68	0.96	High	0.652(**)
Blended learning helps in the implementation of the study plan in less time than usual.	3.76	1.04	High	0.644(**)
The student focuses more on what is stated in blended learning techniques than the faculty member discusses it.	3.67	0.99	High	0.529(**)
Blended learning reduces students' questions and inquiries.	3.66	0.99	medium	0.529(**)
Blended learning is more expensive than traditional learning.	3.58	1.01	medium	0.527(**)
Students view scientific knowledge as non-negotiable in the case of blended learning.	3.57	1.05	medium	0.523(**)
Blended learning reduces communication between students.	3.53	1.05	medium	0.519(**)
Blended learning takes much more time than regular learning.	3.51	1.06	medium	0.508(**)
I think blended learning is not much different from traditional learning.	3.46	1.08	medium	0.498(**)
Blended learning limits interaction between students and faculty.	3.45	1.11	medium	0.488(**)
The general trend of faculty members tends towards blended learning.	3.70	0.54	High	

(**) The correlation score is statistically significant at the level of ($\propto \leq 0.05$).

In light of the weights of the resolution paragraphs of the five-point Likert scale mentioned above, the arithmetic mean of 3.67 and above is considered high. If the arithmetic average is between 2.34-3.66, it is considered an average, and if the arithmetic mean is between 1-2.33, it is considered low.

The results of Table 3 regarding the attitudes of faculty members towards blended learning indicate that the general trend was high, which indicates that the attitudes of faculty members towards blended learning are positive and high, as the general average of this trend was 3.70 with a standard deviation of 0.54.

The table also indicates that the paragraph that stated: "I see the need to teach blended learning to universities" came in first place with an arithmetic mean (3.94) and a standard deviation (0.82), while the paragraph that stated: "Blended learning limits interaction between students and faculty members" came in last place with an arithmetic mean (3.45) and a standard deviation (1.11).

It is noted that all the standard deviations of the variables of this element were less than 1.5, which is an indicator of the degree of validity and significance of the study data, being rather homogeneous data. The results of the correlation coefficient of faculty members' attitudes towards blended learning show the existence of positive and significant trends at the level of statistical significance (P-value<0.001), with all paragraphs of trends.

These results can be explained by the fact that blended learning has become one of the most prominent forms of education in which ICT is used, after its very widespread across societies (Baquero & Escortell, 2022). Blended learning creates an interactive environment between the students and the faculty member, which helps to provide a cooperative atmosphere between them, as well as the development of positive attitudes between them. It allows communication between the faculty member and students outside lecture times, and it also allows the student to send inquiries and assignments through e-mail, bypassing the restrictions of time and place in the educational process to obtain information as quickly as possible, thus, providing an interactive environment (Alsalhi et al., 20221; Tong et al., 2022). Furthermore, it also provides the student with scientific material through various applications, accompanied by visual means such as images and graphics. This helps in reducing the administrative burdens of courses, the use of electronic means and devices in delivering information and assignments to students, in addition to the multiplicity of methods for evaluating their development, and the use of various accurate and fair methods in evaluating their performance, as well as speeding up the presentation of the largest amount of scientific material. It also helps in the implementation of the study plan in a shorter time, and it increases the confidence of the faculty member in himself. The presentation of the educational material using blended learning is more exciting for students than regular or traditional presentations.

Results Related to the Second Question

"What are the difficulties facing the application of blended learning from the point of view of faculty members in Jordanian universities?"

Table 4. Arithmetic Averages and Standard Deviations of Difficulties Faced by Faculty Members in Using Technologies in Blended Learning

Paragraphs	Arithmetic mean	Standard deviation	Degree of difficulty	Degree Link
Scarcity of equipped halls.	3.87	0.86	High	0.798[**]
Introduce devices and tools.	3.79	0.95	High	0.721[**]
Sudden breakdowns of devices.	3.80	0.94	High	0.736[**]
Some faculty members do not have the skills to use hardware	3.68	0.95	High	0.668[**]

equipment.				
Lack of material incentives.	3.81	0.94	High	0.744(**)
Lack of moral incentives.	3.67	1.01	High	0.661(**)
Sudden malfunctions of devices	3.75	0.94	High	0.702(**)
The halls are closed upon completion of the lecture.	3.78	0.94	High	0.718(**)
The need for technical staff for maintenance.	3.83	0.92	High	0.765(**)
The financial cost you need.	3.73	0.96	High	0.689(**)
Represent an additional burden on the faculty member.	3.66	1.00	Medium	0.591(**)
It does not fit into all the subjects taught.	3.56	1.06	Medium	0.481(**)
Some students do not respond to this type of education.	3.65	1.02	Medium	0.554(**)
It occupies the student with other matters that have nothing to do with the lecture.	3.59	1.05	Medium	0.485(**)
Scarcity of appropriate training opportunities for students.	3.74	0.95	High	0.694(**)
Scarcity of training opportunities for faculty members.	3.77	0.90	High	0.707(**)
Difficulty in operating hardware and software.	3.69	0.89	High	0.682(**)
Adversely affect the personality of the faculty member.	3.61	1.04	Medium	0.535(**)
Scarcity of technical support in time of need.	3.71	1.00	High	0.688(**)
The use of technologies is an additional financial burden for universities.	3.76	0.94	High	0.704(**)
The general trend of difficulties facing the use of technologies in blended learning.	3.72	0.52	High	-

(**) The correlation score is statistically significant at the level of ($\propto \leq 0.05$).

The results of Table 4, with regard to the difficulties facing the use of technologies in blended learning, show that the general trend was high. This indicates that there are difficulties facing the use of technologies in blended learning, as the general arithmetic average of the answers of faculty members to the difficulties questionnaire reached 3.72 with a standard deviation of 0.52 and a high degree in light of the weights adopted in the previous trends table.

The table also indicates that the paragraph that states: "Scarcity of equipped halls" came in first place with an arithmetic mean (3.87) and a standard deviation (0.86), while the paragraph that states: "Not suitable for all subjects taught" came in last place with an arithmetic mean (3.56) and a standard deviation (1.06). The above data on difficulties in using technologies in blended learning have been observed: a scarcity of equipped halls, the need for technical staff for maintenance, the absence of physical edges, sudden equipment failures, and the scarcity of training opportunities for faculty members.

It is noted that all the standard deviations of the variables of this element were from 1.5, which is an indicator of the degree of validity and significance of the study data, being rather homogeneous data. The results of the correlation coefficient for the difficulties facing the use of techniques in blended learning show that the correlation coefficient values are significant at the level of statistical significance (P-value < 0.001) with all difficulties variables.

It is noted from the results shown in Table 4 that faculty members in Jordanian universities face difficulties in applying blended learning at a high rate. The application of this type of education requires great capabilities represented in the provision of developed computers (one computer for

each student), equipped laboratories, the provision of permanent and continuous maintenance, and mastery of computer skills by students and faculty members. The weakness of capabilities, the scarcity of laboratories equipped with equipment, in addition to the lack of prior preparation and in-service training are one of the most prominent obstacles to the application of blended education. Its application requires more effort, time, and financial cost that the university entails in preparation, and the processing of all the material and human requirements of blended education. All of these factors constitute a financial burden on universities, especially since some universities are facing a financial crisis. The lack of incentives and equipment leads to insufficient attention being given to the use of blended learning. Additionally, due to the significant effort required for preparation and prior planning, as well as the scarcity of continuous follow-up by department heads and deans, the strategies practiced by faculty members in lectures, along with the plans they prepare and the references they adopt, are not suitable for application using blended learning. Furthermore, the lack of computer knowledge, the absence of computerization of the subject, and the lack of material and moral incentives have contributed to the insufficient attention given to these areas, as faculty members struggle with the magnitude of effort required for preparation and follow-up of students individually. The study material and references adopted by faculty members and their plans were not prepared to be applied through blended learning. This is because computer knowledge and computerization of study materials (courses) are among the most prominent obstacles in the use of this type of education. This is in line with studies that have mentioned lack of technological and computer skills as hindrances to blended learning (Cao, 2023; Osakwe et al., 2023; Zakariya et al., 2024). In addition, the faculty member and student also face difficulty in switching from traditional teaching methods, such as lecture and faculty centered indoctrination, to the blended learning method. This is in addition to technical obstacles related to malfunctions and sudden hardware that stops working, which causes confusion for both teachers and students.

Recommendations

The following recommendations were given based on the study's findings:

1. Establishing a department or center for managing blended learning, producing educational programs under the supervision of a group of specialists, and Arabizing global open source software to inform, train, and motivate faculty members in various disciplines to use it.
2. Organizing training programs for faculty members at universities in Jordan, and proposing incentive incentives (moral and material) for those who enrolled in courses.
3. Setting up halls with modern equipment, preparing them for blended learning practices, and ensuring technical support is available to address any unexpected issues.
4. Connecting the adoption of blended learning by faculty members to promotion criteria, performance evaluation programs, and faculty development at the university.

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