

# Factors associated with the Implementation of Blended Learning in Jordanian Universities

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## Abstract

The study aims to investigate the availability of factors associated with the implementation of blended learning in Jordanian universities from the perspective of faculty members. The analytical approach was adopted and also a survey to obtain data. The study sample consisted of (180) faculty members in Jordanian universities for the academic year 2021/2022. To achieve the objectives of the study, a questionnaire consisting of (42) items was developed and divided into five domains, namely: organizational readiness, ICT tools, technical resources, faculty members, and students. The findings indicate that the availability of factors associated with the implementation of blended learning in the Jordanian universities for the five domains was medium. On one hand, the findings indicate that there were no statistically significant differences at the significance level ( $\alpha \leq 0.05$ ) in individual responses to the study sample that could be either attributed to the university (public/private) variable or the faculty (sciences/humanities) variable.

**Keywords:** Blended Learning, E-learning, Jordanian Universities.

## INTRODUCTION

Higher education is featured prominently among worldwide priorities seeking development and fostering their economic, social and even political development. Universities are considered an instrument for the advancement of societies in all cultural, intellectual, social, economic and political aspects. Universities contribute to the replenishment countries and societies with qualified educational outputs capable of leading change and leading economic, social and political development, as well as their role in building human capacities and skills development needed by various sectors of the society.

Higher education has been, in a point of fact, undergoing constant and rapid change related to the accelerating systemic change in

twenty-first-century societies. The scope of evolving challenges in which these universities operate has also become known and familiar, including traditional academic programs, lack of financial support, and rapid global technological and knowledge development (Auso, Nuree, and Hamdi, 2017). More recently, one of the most remarkable challenges was the spread of covid 19 pandemic and its forcibly sweeping changes in the higher education mechanisms, where universities have resorted, after a complete lockdown and the suspension of traditional (face-to-face) instruction in universities, to the implementation of e-learning.

All the foregoing was a reason for universities and higher education institutions to foster continued research towards making strategic changes to adapt to these challenges. The traditional model of higher education is

however no longer sufficient. Therefore, it has become necessary to introduce information technology (IT) and information and communication technologies (ICT) to be embedded into the learning process, which resulted in coming up with a new learning model called “blended learning”. It is a new learning model in higher education and a unique E-learning pattern that complements the learning process. Blended learning hence calls for the integration and use of modern technological means and devices in learning situations, intending to providing a new type of education that suits the changing circumstances and to commensurate with students’ characteristics and attitudes (Tayseer, 2018).

Blended learning is defined as a methodology that brings the advantages of both traditional learning and e-learning together and overcomes the pitfalls in each by embedding both traditional learning (in its various forms) and e-learning (in its various patterns) to increase the effectiveness of the learning situation and the opportunities for academic and social interaction, among students (Lapitan, & others, 2021). Al-Harashseh, and Al-Adili, (2018) also defined blended learning as a learning process that uses an effective set of modern teaching strategies, teaching methods and learning patterns that facilitate the learning process, and is built on based on embedding the traditional methods (in which students meet face to face) with the e-learning methods.

In deed blended learning is of central concern to many universities around the world at present due to the availability of several advantages in implementing it, including the accessibility and sharing of knowledge, the sufficient flexibility provided by blended learning to meet all individual needs, learning patterns of learners at all levels ages and times, building on the technological advancement in designing, implementing and optimal use of physical and virtual resources, exposure to lifelong learning, and the transition from collective learning to student-centered learning where students become active and interactive (Mozelius, 2017).

The Hashemite Kingdom of Jordan has been keen to confront these challenges and changes in response to the global rapid technological and knowledge advances in all fields. It has therefore become necessary for Jordanian universities to upgrade higher education and increase its efficiency and quality by making fundamental changes to the education system and to construct learning models and patterns that are flexible and efficient through embedding - and not replacing - traditional education, e-learning and blended learning together. To achieve this, the Ministry of Higher Education and Scientific Research (MOHE) and the Jordanian Accreditation and Quality Assurance Commission for Higher Education Institutions (AQACHEI) have developed an executive action plan to integrate e-learning in its both full and blended forms and to institutionalize it to be part of the educational system in Jordanian universities to improve the quality of education, quality assurance and the quality of its outputs to keep abreast of global developments in this context (Ministry of Higher Education and Scientific Research, 2021).

In the same context, it is noteworthy that the process of implementing blended learning in higher educations is not limited to the use of technology in the learning and teaching processes, but rather is a process of building an effective system, and re-designing a scientific and transformative process that requires organizational readiness; dissemination of a culture of transition to blended learning at the higher education; development of higher education systems that support and assist the blended learning system; provision of technological and technical resources such as servers, Internet connections, and e-learning system that ensures the availability and accessibility to electronic information sources, training faculty members and developing their capabilities to implement blended learning, managing the e-learning system, providing continuous educational and technical support to them and to their students, as well as restructuring academic programs on the basis of criteria for the implementation of blended

learning in these programs (Apandi, and Raman, 2020).

All the foregoing shows that the successful implementation of blended learning model in universities determined by the availability and readiness of a set of factors in these universities such as organizational readiness, technological sources, educational resources, educational materials, faculty members and students. All this however justified the researcher to conduct this study, which aims to identify the factors associated with the implementation of blended learning in Jordanian universities.

## Literature Review

### Significance of Blended Learning

The significance of blended learning is in the goals the university seeks to achieve by adopting a blended learning system. One of these goals is to develop the structure of the university's infrastructure in line with the requirements of the transition to blended learning. The second goal is to develop the capabilities and skills of faculty members, students and all those concerned in response to the requirements of this transformation. The third and final goal is to adopt and apply quality standards for designing educational materials and producing e-courses according to pedagogical foundations (Makhlouf, 2010).

### Advantages of Blended Learning in Higher Educations

Among the advantages of blended learning Smith& Brame (2020) stated some advantages such as responding the diversity of students and their different characteristics through the employment of differentiated instruction; providing learning opportunities for students of all levels beyond the limits of time and place; and raising the quality of teaching process by employing methods of understanding, analysis, synthesis and design (Smith, and Brame, 2020). Blended learning also enhances students' abilities and practical skills in using computers; it presents information in an interactive manner that allows students to think and innovate away from drilling; it provides students with

opportunities to practice and train in the educational environment; and it helps to develop students' intellectual abilities, technological and personal skills in a rapidly global changing technological and learning environment (Supreme Council of Universities, 2018).

In the same context Castro (2019) set out several trends and capabilities that are enhanced by the implementation of blended learning models in higher education with the help of techniques and technology tools such as digital platforms and smart teaching systems. Within these capabilities is to contribute to improving learning and teaching activities, facilitating self-paced online learning activities, offering an individual path of learning for each student, and finally providing shareable and reusable digital resources to achieve the concept of sustainability in blended learning. In the same direction Ababneh (2022) mentioned that blended learning proves to have several benefits to students, it helps students to increase their attendance to face-to-face classes, assist them to improve their professional skills, gain further knowledge, master time management, and enhance their online discussion skills.

### Factors associated with Blended Learning:

The implementation of blended learning in universities is associated with a set of theoretical and philosophical foundations that can be summarized in the following points:

- Preparing an effective professional educational leadership capable of leading change and planning for the implementation of blended learning.
- Promoting an institutional culture that supports change, development, innovation and creativity.
- Using information and communication technology (ICT) efficiently.
- Diversifying sources of knowledge and information, and presenting them with advanced multi-media techniques.

- Adopting interactive learning for an active learner as the focus of the teaching-learning process.
- Team building and development of leadership through cooperation and collaboration.
- Providing opportunities for innovation and creativity among students by developing their higher-order thinking skills (Al-Jasser, 2018).

Bruggeman & others (2021) also identified a suite of factors associated with the faculty members who play a pivotal role in any process of educational change, including, for example, recognizing the educational need to shift towards blended learning, dealing with changing educational roles, and employing student-centered learning concepts and processes, and the ability to link technology and the Internet technologies to the learning processes.

It is noteworthy that concepts of blended learning in the field of higher education and universities have attracted the attention of researchers to investigate the importance of adopting blended learning models in universities. Adhi, Achmad and Herminarto (2022) conducted a study aimed at developing a blended learning model in Islamic religious education to improve learning outcomes in three Islamic universities in Yogyakarta, Indonesia. The three-stage developed model consisted of three stages first analysing students' characteristics and determining learning objectives, second selecting instructional strategies, technology, media and learning materials, and finally utilization of instructional strategies, technology, media, learning activities, students engagement, and assessment strategies and tools. Results showed the innovation of this model was the simple steps into building blended learning and has the originality to the contextually subject matter.

At the University of Santo Lapitan & others (2021) employed a blended learning strategy in the context of teaching and learning of Physical Chemistry<sup>1</sup> and Analytical Chemistry for Chemical Engineering students

to face these difficulties in teaching undergraduate Chemistry courses at the University of Santo Tomas during the COVID-19 pandemic. Blended learning strategy five-components referred to as Discover, Learn, Practice, Collaborate and Assess (DLPCA). In DLPCA observations showed that DLPCA had a positive impact on students and instructors. The survey also indicated that most of the students are satisfied with the DLCPA strategy. Hence, this strategy is considered a manageable and effective alternative that can be adapted to full online instruction to other undergraduate Chemistry lecture courses.

Another study conducted by Petronzi and Petronzi (2020) in United Kingdom that aimed to propose an online and campus blended learning model by incorporating synchronous and asynchronous learning experiences, aiming to build a blended learning system rather than simply adding technology. The proposed model outline included the employment of three types of learning, including asynchronous learning, simultaneous learning, and campus face-to-face learning. The researchers believe that this learning if properly employed, raises the degree of students' engagement and enhances their confidence in their learning, and enables faculty members to explain the educational content and apply interactive activities and the use of formative assessment during meetings.

Al-Sayed (2019) also conducted a descriptive study in Bahrain aimed to monitor the most important training needs of faculty members in the field of designing and utilizing blended learning tools in higher education; and to analyze their levels of technological and teaching self-efficacy to design and utilize blended learning tools in higher education. The sample consisted of (68) respondents (all faculty members) in the five faculties of the Arabian Gulf University, Kingdom of Bahrain. The findings of the study showed that faculty members at the Arabian Gulf University faculties need to be trained on several topics and skills in the field of designing and using blended learning tools, the most important of which are, in order: ethical issues in blended learning, teaching and learning strategies, educational issues in blended learning, students

analysis and their educational needs, and technological issues.

In the same vein, Al-Soub, Al-Sarayrah and Amarin (2021) recommended the necessity to disseminate the culture of e-learning among faculty members in higher educations and clarify its importance as a support tool for the blended learning process; also to establish centers equipped with the latest technologies to train faculty members in designing and preparing electronic educational materials; and to provide material and moral incentives to encourage them to employ e-learning.

Finally, Shaaban (2015) conducted a study aimed at identifying the key barriers to the use of blended learning in postgraduate educational studies at Cairo University from the perspective of faculty members. The study used a descriptive survey method, the sample of the survey consisted of (51) faculty members. The findings showed that there are a significant number of barriers to the use of blended learning in postgraduate educational studies at Cairo University, and those barriers associated with the technological infrastructure ranked first, followed by barriers associated with faculty members, the course and students. The study recommended providing an infrastructure of highly efficient technologies, preparing students to accept blended learning, disseminating a culture of blended learning among faculty members and training them to prepare e-courses.

#### Problem of the Study

In their study Wong, Tatnall, and Burgess, (2014) mentioned that the move towards “blended learning consisting of a combination of online and face-to-face teaching, continues to gain pace in universities around the world, they also mentioned that Universities are now making more use of information and communications technologies (ICT) such as the internet, and many have adopted a “blended learning” approach. In the same context Bayrak, Akcam, (2017) argued that an increasing number of higher education institutions have implemented them blended online learning environments to help students

develop positive learning experiences. In addition, since they are committed to improving student access to quality learning materials, more and more higher education institutions are making use of various blended online learning environments to directly support learning and teaching.

This study is mainly concerned with investigating the factors underlying the implementation of blended learning in a variety of Jordanian universities from the perspective of their g faculty staff.

#### Objective of the Study

This study aims to:

1. Find out the availability of factors associated with the implementation of blended learning (organizational readiness, technical sources, supportive curriculum of blended learning, faculty members, and students) in Jordanian universities, and ensure its sustainability and effectiveness from the perspective of faculty members in these universities.
2. Identify the existence of statistically significant differences in the availability of factors associated with the implementation of blended learning in Jordanian universities from the perspective of faculty members which are attributed to the (university, faculty, academic rank, and years of teaching experience) variables.
3. Make recommendations to leadership and senior administration in Jordanian universities to ensure the availability of factors associated with the implementation of the blended learning as important pillars that support the success of blended learning model in the long term.

#### Question of the Study

This study is mainly concerned with investigating the factors associated with the implementation of blended learning in Jordanian universities from the perspective of their teaching faculty members. The study attempts to address the following questions:

1. To what extent are the factors of the implementation of blended learning in Jordanian universities available from the perspective of their teaching faculty members?
2. Are there statistically significant differences at the significance level ( $\leq 0.05 \alpha$ ) between the estimates of faculty members for the availability of the factors associated with the implementation of blended learning in Jordanian universities due to variable of the academic institution (e.g., public or private)?
3. Are there statistically significant differences at the significance level ( $\leq 0.05 \alpha$ ) between the estimates of faculty members for the availability of the factors associated with the implementation of blended learning in Jordanian universities due to faculty's experience?

#### Significance of the Study

The significance of blended learning is reflected in providing a better, speedy and flexible learning without being confined to the bounds of time and place; in raising the motivation of the learning process through using multimedia; in fostering the concept of collective work and collaborative work; and in saving learners time and developing their experiences. Its significance is also reflected in achieving specific educational goals through the use of various technological tools.

In light of the challenges and changes the world has been witnessing recently, the significance of this study however stems from the importance of the concept of blended learning and the need to switch to it as a continuous learning method and approach in Jordanian universities. Its significance also stems from the importance of its objectives in investigating the awareness of faculty members in Jordanian universities of the concept of blended learning, its models and mechanisms of implementation, and in investigating the reality of blended learning and the readiness of factors associated with its implementation right up to the construction of a computer-aided model for the implementation of blended learning in these universities.

#### Terms of the Study

The following are the terms and definitions of the study.

**Blended Learning:** is an approach to learning in which both traditional learning and e-learning are used within certain percentages in the teaching-learning process in accordance with the requirements of the learning situation to improve the achievement of educational goals.

#### Limitations of the Study

This study is conducted in a number of Jordanian universities. This study is also limited to the extended period during the first semester of the academic year 2021/2022. Finally This study is limited to a sample of faculty members in Jordanian universities.

### Methodology of the Study

#### Research Approach

To achieve the nature and objectives of the study, a descriptive-analytical method has been used to collect and analyze the data of this study problem using the measurement instrument. the questionnaire applied to a representative sample of the study.

#### Study Population

The study population consists of (1934) faculty members from University of Jordan (public), and Al Zaytoonah University of Jordan (private), in the Jordanian capital Amman during the first semester of the academic year (2020/2021).

#### Study Sample

A random sample has been selected from the study population consisting of (180) faculty members from the Scientific and human Faculties at University of Jordan, and Al Zaytoonah University of Jordan.

#### Study Instrument

To achieve the objectives of the study, the theoretical literature and previous studies addressing the quality of educational service have been suitably reviewed. The measurement

instrument used in this study has been constructed after reviewing the theoretical literature, relevant previous studies, and reviewing the measurement instruments used in them. The questionnaire consisted of (42) items distributed over five domains: organizational Readiness (10) items, ICT tools (10) items, Technical resources (7) Faculty members (7) items, and Students (8) items (Appendix 1).

#### Study Instrument Validity

To verify the validity of the study instrument, it has been presented to an 8-validator committee with competence and experience from faculty members specialized in the field of university education. The modifications and suggestions of the members of the committee have been considered, and some modification have been made in the questionnaire phrases.

#### Study Instrument Reliability

To verify the instrument reliability, an exploratory sample survey of (40) faculty members was adopted, an internal-consistency approach (Cronbach's Alpha) was used to compute the reliability coefficient. As shown in Table (1), the values for the reliability coefficient of the domains of the research instrument ranged from (0.92) to (0.96), and for the entire instrument was (0.90). They all are considered educationally appropriate and acceptable reliability coefficients that fulfill the study purposes.

Table (1) *Cronbach's Alpha Reliability Coefficient for the Domains of study Instrument and for the Entire Instrument*

Domain	No. of Items	Internal Consistency
Organizational Readiness	10	0.93
ICT tools	10	0.94
Technical Resources	7	0.94
Faculty Members	7	0.96
Students	8	0.92
<b>Overall Reliability of Entire Instrument</b>	<b>42</b>	<b>0.90</b>

#### Study Instrument Correction

To answer the research questions; the following statistical methods are used

1. Means and Standard Deviations of individual responses to each item of the study instrument. To evaluate the availability of factors associated with the implementation of blended learning in Jordanian universities from the perspective of faculty members, the degree of availability is classified into three levels (Low, Medium, High) by calculating the mean; using the following formula:

$$\text{Length of One Category} = \frac{(\text{the Highest Value of the Alternative} - \text{the Minimum Value of the Alternative})}{\text{Number of Levels}} = \frac{(5-1)}{3} = 1.33$$

And by adding (1.33) to the Minimum Value of the alternative (the minimum); the criterion for expressing those levels is: the Mean ranging (1 - 2.33) indicates a Low Degree, the Mean ranging between (3.67 - 2.34) indicates a Medium Degree, and the Mean ranging between (5 - 3.68) indicates a High Degree.

2. Independent Sample T-Test: is used to determine whether there are any statistically significant differences between the means of individual responses to the questionnaire items by the variable of University (Public, Private).

3. One-Way ANOVA Analysis: is used to determine whether there are any statistically significant differences between the means of individual responses to the questionnaire items by the variable the Years of Teaching Experience (1-5 years, 6-10 years, 10 years and over).

#### Statistical Processing

The following statistical processing, namely: means, standard deviations, and T-Test for independent variable, and one-way ANOVA Analysis are used and calculated to conduct the statistical processing.

## Results and Discussion

This section gives insight into the results and discussion related to the questions of the study.

First question:

To what extent are the factors of the implementation of blended learning in Jordanian universities available from the perspective of their teaching faculty members?

To answer this question, the means and standard deviations of study sample responses to the items related to the five domains of the study instrument and the entire instrument were calculated. Table (2) illustrates those findings.

Table (2) *Means, Standard Deviations, and Rank of faculty members Responses to the Five Domains of Research Instrument and the Entire Instrument*

Domain	Mean	Standard Deviation	Degree	Rank
Organizational Readiness	3.481	0.821	Medium	2
ICT tools	3.330	0.858	Medium	4
Technical Resources	3.371	0.907	Medium	3
Faculty Members	3.587	0.923	Medium	1
Students	3.141	0.944	Medium	5
<b>All Instrument Items</b>	<b>3.379</b>	<b>0.808</b>	<b>Medium</b>	

As shown in Table (2), the mean of faculty members to the overall questionnaire items was (3.379) indicating that the availability of factors associated with the implementation of blended learning in Jordanian universities from the perspective of faculty members is generally medium. Table (2) also indicated that the availability of factors associated with the domain "Faculty Members" was medium and ranked first with a mean of (3.587), the availability of factors associated with the domain "Organizational Readiness" was medium and ranked second with a mean of (3.481), the availability of factors associated with the domain "Technical Resources" was medium and ranked third with a mean of (3.371), the availability of factors associated

with the "ICT tools" was medium and ranked fourth with a mean of (3.330), and the availability of factors associated with the domain "Students" was medium and ranked last with a mean of (3.141).

The reason for these medium results may be attributed to the fact that the implementation of blended learning in Jordanian universities is considered a new trend in those universities, as the pattern of education that prevailed in Jordanian universities was traditional face-to-face education. Blended learning was only applied in a few of these universities before the Covid-19 pandemic, and it was not during the post-pandemic period, universities can complete all the necessary equipment to apply blended learning professionally. As Jordanian universities need in this direction process of building an effective system, and re-designing a scientific and transformative process that requires organizational readiness; dissemination of a culture of transition to blended learning at the higher education; development of higher education systems that support and assist the blended learning system; provision of technological and technical resources such as servers, Internet connections, and e-learning system that ensures the availability and accessibility to electronic information sources, training faculty members and developing their capabilities to implement blended learning.

Second question:

Are there statistically significant differences at the significance level ( $\leq 0.05 \alpha$ ) between the estimates of faculty members for the availability of the factors associated with the implementation of blended learning in Jordanian universities due to variable of the academic institution (e.g., public or private) ?

To answer this question, an independent sample T-test is used to determine whether there are any statistically significant differences between the means of individual responses to the study instrument items by the type of university (public, private) variable, and Table (8) shows this.

Table (3) *Independent Samples T-Test of the Differences between Means of estimates of faculty members Responses to Questionnaire Items by the Type of University (Public, Private) Variable*

Type	Total	Mean	Standard Deviation	Degrees of Freedom	T-Value	Statistical Significance
Public	88	3.291	0.828	178	1.435	0.153
Private	92	3.464	0.783			

Table (3) shows that there is no statistically significant difference ( $\leq 0.05 \alpha$ ) between the two means of faculty members responses to the study instrument items by the university type (public, private) variable. This however could be attributed to the fact that blended learning in Jordanian universities, and the associated provision of an e-learning system as a support tool for the implementation of the blended learning system, has been formally circulated by the Jordanian Ministry of Higher Education through official instructions and letters, and its implementation in public and private Jordanian universities during the coronavirus pandemic. Both public and private Jordanian universities have responded to the same context.

Third question:

Does the availability of factors associated with the implementation of blended learning in Jordanian universities differ from the perspective of faculty members by the years of teaching experience (1-5 years, 6-10 years, 10 years and over) variable?

To answer this question, the means and standard deviations of individual responses to

Table (5) *One-Way ANOVA to Determine Statistical Significance Differences between the Means of Individual Responses to Questionnaire Items by the Years of Teaching Experience Variable*

Source of Variation	Sums of Squares	Degrees of Freedom	Mean Square	F	Statistical Significance
Between Groups	4.724	2	2.362	3.730	0.026*
Within Groups	112.085	177	0.633		
<b>Total</b>	<b>116.810</b>	<b>179</b>			

\* Statistically significant at the level of statistical significance ( $\leq 0.05 \alpha$ )

the questionnaire items were calculated by the years of teaching experience (1-5 years, 6-10 years, 10 years and over) variable, and Table (4) shows these findings.

Table (4) *Means and Standard Deviations of faculty members Responses to Questionnaire Items by the Years of Teaching Experience Variable*

Years of Experience	Total	Mean	Standard Deviation
1-5	59	3.610	0.750
6-10	60	3.286	0.858
10 and above	61	3.248	0.774
<b>Total</b>	<b>180</b>	<b>3.379</b>	<b>0.808</b>

The one-way analysis of variance (ANOVA) was also used to determine whether there is any statistical significance of the differences between the means of individual responses to the questionnaire items by the years of experience (1-5 years, 6-10 years, 10 years and over) variable, and Table (5) shows these findings.

Table (5) shows that there are statistically significant differences between the means of individual responses to the questionnaire items by the years of teaching experience (1-5, 6-10, 10 years and over) variable, which means that

the perspective of faculty members in the availability of factors associated with the implementation of blended learning varies by their years of teaching experience. To find out in favor of which those differences were Two-Way Post-Hoc Comparisons were made between the means of individual responses to the questionnaire items by the years of teaching experience variable using Scheffe Test, and Table (6) shows the finding of the Two-Way Post-Hoc Comparisons.

Table (6) *Two-Way Post-Hoc Comparisons of Difference between Means of faculty members Responses to Questionnaire Items by the Years of Experience Variable Using Scheffe Test*

Years of Experience		Difference between Means	Significance Level
1-5	6-10	<b>0.324</b>	<b>0.087</b>
	10 and Above	<b>0.362*</b>	<b>0.047</b>
6-10	1-5	<b>- 0.324</b>	<b>0.087</b>
	10 and Above	<b>0.038</b>	<b>0.966</b>
10 and Above	1-5	<b>- 0.362</b>	<b>0.047</b>
	6-10	<b>- 0.038</b>	<b>0.966</b>

\* Statistically significant at the level of statistical significance ( $\leq 0.05 \alpha$ )

Two-Way Post-Hoc Comparisons between the means of individual responses to the questionnaire items by the years of teaching experience variable shown in Table (6) indicate that there is a statistically significant difference between the mean of individual responses to the study sample whose years of experience ranged (1-5) years amounted to (3.610), and the mean of individual responses to the study sample whose years of experience ranged (10 years or over) amounted to (3.248), and in favor of the study sample members whose years of experience ranged (1-5) years. This however could be attributed to the fact that faculty members with recent experiences have interest and positive trends in using and employing technology and its tools, software and electronic applications in the learning-teaching process, hence making them more responsive to the questionnaire items.

## Conclusion

The study aims to investigate the availability of factors associated with the implementation of blended learning in Jordanian universities from the perspective of faculty members. The findings indicate that the availability of factors associated with the implementation of blended learning in the Jordanian universities was moderately, as the faculty members is ranked first, while the organizational readiness is ranked second, technical resources come in the third rank, ICT tools are ranked fourth, while the students are ranked the last. In addition, it was notable from the faculty member's Responses that the Moodle System is implemented highly in blended learning, while providing needy students with free internet packages to activate the e-learning system, and providing computers for students who do not have, are categorized with the lowest grade from the faculty member's Responses. As a final result, it can be said that Jordanian universities must intensify their efforts in the direction of developing and improving the factors associated with the implementation of blended learning, especially building online exams and students' evaluation mechanisms, and training and rehabilitating of faculty members and developing their capabilities to implement the blended learning.

## Recommendations

In the light of the results of this study, the researcher recommended the necessity to disseminate the culture of blended learning among faculty members and students, create an effective self-paced learning environment, clarify its importance for the teaching learning process; also to establish centers equipped with the latest technologies to train faculty members in designing and preparing electronic educational materials, enables faculty members to explain the educational content and apply interactive activities and the use of formative assessment during meetings.

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