Attitudes of Faculty Members at the University of Jordan towards Employing Blended Learning Strategy in Higher Education

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Abstract
This study aims to pinpoint the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education. Due to the nature of the study, the descriptive survey approach is applied to a study sample consisting of (510) faculty members at the University of Jordan. To achieve the objectives of the study, a questionnaire consisting of (30) items has been designed. The results show that the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in university education are of a high degree. The results also show that there are no statistically significant differences in the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in university education due to the variables of experience, academic rank, and the faculty type. In light of the results of the study, the study has recommended emphasizing significance of blended learning and its applicability in the educational process, as it combines more than one teaching method and meets the requirements of the educational position and process.

Keywords: Attitudes, Faculty Members, Blended Learning, University Education
1. Introduction

Nations’ future depends on the youth and juniors who are the men of the future and the pillar that depends on them. Society has several significant educational institutions playing a key role in raising its children to qualify them to perform the roles that help society in development and progress. Universities and institutes are one of these institutions that have a great impact on educating and preparing young people in society by providing them with educational experiences, knowledge, and activities, assisting them to develop comprehensively. These experiences and activities depend on the faculty member who is the cornerstone of the teaching process.

The faculty member in higher education institutions is a mainstay in the formation of the prospective graduate qualified to fulfill those roles. The Ministry of Higher Education seeks to meet the needs of society for competencies capable of carrying out its basic tasks. Therefore, the faculty member must first be proficient in the skills of the era, especially in the field of technology, which has become a basic feature of this era. The educational literature indicates the necessity of good and integrated preparation of all faculty members according to modern attitudes and methods (Asmari & Khan, 2014).

Higher education institutions have also spared no effort in introducing various developments and modern technologies to the agenda of their institutions to keep pace with the rapid developments in technology and take advantage of what these technologies contain. In educational circles, it is agreed that university education aims to build and form the personality of the individual by providing him with experiences and attitudes, enabling him to succeed in his practical and scientific life and face the challenges and problems of the future scientifically based on the foundations of sound thinking (Veletsianos, 2010).

This modern era is characterized by rapid changes resulting from scientific, technological, and information technology advancements. Thus, it has become necessary to keep pace with the educational process of these changes to face the problems resultant from them such as too much information, an increase in the number of students, a shortage of teachers, and long distances. These changes have led to the emergence of many styles and methods of education, especially in the field of individual learning or in which the learner walks according to his capacity, ability, speed of learning, and his previous experiences and skills as solutions in facing these changes, where the concept of distance learning has appeared, in which the student learns anywhere...
without the need for the permanent presence of the teacher. With the advent of the technological revolution in information technology, making the world a small village, the need to exchange experiences with others, alongside the student's need for rich multi-source environments for research and self-development have increased, which have led to the emergence of the concept of electronic learning or E-learning (Litvinski, 2018).

Numerous educational institutions have tended to employ e-learning systems and technologies in the educational process after realizing the necessity of adopting integrated electronic systems supported by modern technologies to help the faculty member in the educational process to diversify the teaching methods and approaches inside and outside the classroom and enhance students’ capabilities academically and technically. The role of the teaching member in university education, therefore, is not limited to using the traditional classroom methods in the learning process, but rather it has become necessary to keep pace with the changes, developments, and teaching methods proven by scientific research to have various benefits in the educational process (Othman and Massad, 2017).

E-learning has emerged as a natural development of its first roots represented in Distance Learning, Blended Learning, and Computer-Assisted Instruction. With the start of employing computer networks in learning, including the Internet, the features of e-learning have posed as an integrated strategy. Despite the numerous advantages of e-learning, it is accompanied by many difficulties, problems, and objections centered on the lack of human aspects between the teacher and the student, and what adds to it is the introversion of some learners because they are not in real educational situations (Hayari, 2019).

The weakness in e-learning has led to the emergence of the idea of a blended learning strategy, which is considered one of the modern strategies in this modern era. The interest in introducing a blended learning strategy into educational systems has begun as it is a form of e-learning and a unique educational pattern that complements the education process, calling for the mixing of modern technology methods with traditional educational methods and their interaction together to provide a novel type of education consistent with the characteristics and needs of learners and their academic decisions. The new type of education shall be conducted with the lowest costs, and in a way that enables controlling, managing, and measuring the educational learning process and evaluating students' performance (Jabr and Arnousi, 2014). Educators make a great effort to integrate the advantages of traditional learning, such as social interaction between the teacher and
his students, with the benefits achieved through e-learning such as flexibility as regards the practice of learning (Wali, 2015).

Blended learning is not a novel concept, but rather a new old one, as it has old roots mostly indicating mixing learning methods and strategies with various methods, and many terms are used for it such as blended learning, hybrid learning, and blended learning. The occurrence of learning through blended learning depends on several elements, including experience, context, students, learning objectives, and resources. Blended learning is like a successful cooking recipe or a successful musical note. The more complementary ingredients that support different elements are mixed conveniently and practically, the blended learning is achieved (Abu Musa and Sous, 2014).

As put by Clark (2012), there is no clear and specific definition of blended learning as it can be used in multiple meanings as a type of learning that includes multiple strategies, including traditional learning, and employs several types of technological techniques all at once. This is confirmed by Finn & Bucceri (2014) that blended learning is described as merging traditional teaching methods with e-learning. It is also described as an amalgamation of various educational activities and includes a face-to-face based-teaching strategy, e-learning, and self-learning strategy. Blended learning is also described as a strategy in which teachers use online materials and traditional classroom methods to deliver a range of skills to learners. Several essential elements have been identified for a suitable blended learning design such as learners, time, technical resources, content, and application (Kitchenham, 2015).

Most of the concepts mentioned about blended learning have agreed that it is a method that combines several strategies, methods, tools, or theories to improve learning outcomes, but they have differed in the level of blending, where some focus on blending two styles of traditional learning with e-learning. Others focus on blending several strategies such as collaborative learning and self-learning with e-learning (Hayari, 2019).

The correct combination of traditional and online education is in most times better than traditional face-to-face education and e-learning if each is separate from the other. Against this, several countries of the world have shown interest in this type of learning because of its key characteristics, including investing human resources and available opportunities, stimulating research and learning, employing technology for students, and providing students with effective
skills to be able to face the challenges posed by the rapid growth in the means of acquiring information and skills (Bishop, 2013).

The integration of technology into learning achieves many benefits represented in transforming the information in the course into a tangible experience for the student and saving time and effort to raise efficiency in the teaching-learning process and facilitate the interaction between goals, activities, and evaluation methods (Jaser, 2018). Besides, blended learning is considered a complement to the traditional educational methods of education and a tributary to university education that depends on the lecture, as information technology is not a goal or an end in itself, but rather a means for providing the required knowledge, achieving the known purposes of education, and assisting the learners to adapt to the requirements of life, which has become dependent in one way or another on information technology. Therefore, this type of teaching is integrated with e-learning so that it will support it in an easy, fast, and clear manner (Thiabat, 2018).

University education aims to develop critical and creative thinking skills and methods of generating knowledge, as university education achieves its goals through the perception and learning of the individual how to obtain knowledge and acquire the skills necessary to generate it. The most important role of university education is to achieve the student's creative needs and the practical needs of society, as blended learning is the most appropriate way to achieve self-learning, attain a qualitative leap in the educational process, accustom the learner to continuous learning, enable him to educate himself and enrich information around him, as well as the advantages of blended learning in terms of time flexibility and ease of use (Thiabat, 2018).

Despite the rapid growth in blended technology in educational institutions, several faculty members do not participate in this type of learning and are resistant to participating in it concerning the responsibilities and roles they perform, their professional description, the academic burden, and the incentives they receive. As a result, many educational institutions seek to encourage this group of faculty members to participate in e-learning by providing some incentives (Khatib, 2012). The faculty members have an important role in activating this type of learning by motivating students to practice its various tools to support the educational learning process (Othman and Massad, 2017).
Attitudes are among the most important outcomes of the socialization process and are considered guiding determinants of controlling and organizing social behavior. Therefore, the study of attitudes, personality, group dynamics, communication, and public and private human relations occupies a prominent place in education (Abu Jadu, 2011). Though psychologists differ in defining the concept of attitudes, most educators consider it a relatively stable acquired predisposition that determines the individual's feelings and behaviors towards certain topics and includes a judgment on the individual's feelings and behaviors, whether accepting or rejecting (Sawan, 2015).

Accordingly, the functions of the attitude lie in determining and explaining the path of behavior and organizing motivation, intellectual and cognitive processes about some aspects of the domain in which the individual lives. The functions of the attitude are reflected in organizing the behavior of the individual, his words, actions, and interaction with others in the different groups in the culture in which he lives and facilitating the individual's ability to conduct and make decisions in multiple psychological situations consistently and regularly without hesitation or thinking (Zarrad, 2012).

Examining the attitudes of faculty members towards integrating technology into university education is more important than knowing its applications, tools, programs, and production. It is important to evaluate teachers’ attitudes and identify the positives and negatives of these attitudes to find out the essence of the problem and work to overcome it by preparing training programs for teachers, qualifying them to use blended technology, making sure that educational innovations are introduced into the educational process and its success, integrating technology into the educational process only and focusing on the important human aspects, namely: teachers’ attitudes towards blended learning technology (Anzi and Flickan, 2017). The attitudes of the faculty member towards the implementation of modern teaching strategies are among the most important indicators that predict his success or failure, since his attitudes are the drivers of his behavior, such as the demand to implement these strategies, mastery of the competencies of employing their technological tools in university teaching, and being satisfied with existing teaching methods as they are familiar that does not challenge his abilities nor it requires the development of his competencies (Sayed, 2010).

2. Problem of the Study
The University of Jordan is one of the educational institutions adopting new learning methods that enable the university to move from the culture of education with its traditional methods and approaches to the culture of learning with its modern components and tools. Blended learning is of interest to the University of Jordan officials, as the university has held many conferences, seminars, and discussion committees on blended learning. The University of Jordan has realized the necessity to develop learning environments in line with modern educational attitudes and meet the needs of students, as the University of Jordan held an introductory seminar entitled (Blended learning: The Best Choice) indicating that the current educational methods are no longer sufficient for the purpose, and new learning methods must be adopted. The adoption of new learning and teaching methods enable the university to move from the culture of education with its traditional methods and approaches, to the culture of learning with its modern components and tools, where the adoption of an integrated learning system stimulates all the forces working in education to keep pace with developments, leading to a comprehensive renaissance in education because institutions urgently need to catch up with progress and modernity.

The University of Jordan has started implementing the strategic plan developed for years (2017-2022), as it has begun teaching (70) university courses according to the blended learning system, which combines classroom meetings and e-learning according to class reports. The university has also provided (150) faculty members with specialized and intensive courses related to the methods of blended learning by experts from the university itself, as (30) faculty members are selected to initiate this type of learning in this semester, and the experience has included holding workshops, seminars and courses in blended learning organized by the Accreditation and Quality Assurance Department (Alrai, 2017).

In light of these efforts and endeavors, acceptance and appropriate use of these accelerated and advanced developments do not lead to positive results without prior studies that determine the extent of acceptance of the target group, its attitudes, abilities, and capabilities to assimilate them and the ability to deal with them with ease and mastery to reach the desired goal in the educational learning process. Therefore, the problem of the study is to investigate and identify the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education and the extent of their acceptance of it and their desire to use it, and to identify the impact of each of the variables, i.e. the experience, academic rank, and the faculty
3. Questions of the Study
In light of the problem of the study, the following questions are articulated.
A. What are the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education?
B. Are there statistically significant differences at the level of (a = 0.05) between the arithmetic means of the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education due to the variable of experience, academic rank, and the faculty type?

4. Objectives of the Study
The following objectives are formatted to answer the questions of the study.
A. Identify the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education.
B. Examine if there are there statistically significant differences at the level of (a = 0.05) between the arithmetic means of the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education due to the variable of experience, academic rank, and the faculty type.

5. Significance of the Study
The significance of the study is summarized in the theoretical and practical areas.

The theoretical significance of this study is highlighted in strengthening the positive attitudes of the faculty member to deal and improve with negative attitudes and adopt this type of education to suit their preferences and desires for the success of this learning, generalizing its use in various academic courses, and identifying the close relationships if any between the attitudes of the faculty member towards blended learning applications and each of the three variables: experience, academic rank, and the faculty type.

The practical importance of this study stems from its discussion of a novel and vital topic that may interest those in charge of the educational process in universities, the Ministry of Higher Education, and Scientific Research, and educational decision-makers to raise the educational level addressing a new topic with great interest. This study is considered one of the rare studies that focus on a new method of university education, which is the blended learning method as a new method of e-learning in particular. It is also a new addition to Arab studies related to
blended learning and a nucleus for other future studies. It also contributes to providing real information to decision-makers at the University of Jordan and the University Education Development Center on the degree of employing blended learning, enabling them to take it into the development plans of the faculty member, study programs, and scientific research according to the results of the study and its recommendations.

6. Previous studies

Given the importance of this topic, many studies conducted have dealt with the topic of blended learning. Jaser’s study (2018) aims at identifying the reality of the use of blended learning among the faculty members at the Faculty of Education at Prince Sattam bin Abdulaziz University. Due to the nature of the study, the descriptive approach is used in this study. The study instrument comprises a questionnaire prepared and distributed to the study sample, consisting of (59) faculty members who have fully responded to the study instrument. The results of the study show that the degree of the study sample’s use of blended learning is of a medium degree. The results also show that there are no statistically significant differences in the reality of employing blended learning due to the variables of experience, academic rank, and gender.

Salim’s study (2018) aims at identifying the students' attitudes of Al-Balqa Applied University towards blended learning at the Al-Balqa Applied Academy from their point of view. Due to the nature of the study, the descriptive approach is used in this study. The study sample consisting of (500) male and female students is randomly selected. The study instrument adopted is a 24-item questionnaire prepared by the researcher based on relevant research and studies. The results of the study show that the attitudes of Al-Balqa Applied University students towards blended learning are of a high degree. The results also show statistically significant differences between the arithmetic means of attitudes of Al-Balqa Applied University students towards blended learning due to the gender variable and in favor of male students.

Zahrani’s study (2016) aims at identifying the reality of the use of blended learning in teaching among the faculty members at King Fahd University of Petroleum and Minerals. Due to the nature of the study, the descriptive approach is used in this study. The sample of the study consists of (293) male and female teachers. The study has used a questionnaire consisting of (44) items. The study shows that individuals’ estimates of the reality of the use of blended learning in teaching among faculty members at King Fahd University of Petroleum and Minerals are of a high degree. King Fahd University of Petroleum and Minerals is interested in providing basic training programs in the use of blended learning and specialized training programs in how to
prepare and design electronic courses in an appropriate manner. At the same time, the results indicate that there are no statistically significant differences in the reality of the use of blended learning among faculty members at King Fahd University of Petroleum and Minerals due to variables of faculty, rank, experience, and gender.

Diyabat’s study (2013) aims to explore the effectiveness of blended learning based on the use of blended learning. Due to the nature of the study, the semi-experimental approach is used. The study sample consists of (58) students randomly selected from two majors: child education and a class teacher. To achieve the objectives of the study, an achievement test consisting of (45) items of the multiple tests is used. A scale is also used as a study instrument to measure students’ attitudes towards blended learning. The results of the study show that there are statistically significant differences in favor of the experimental group taught using the blended learning method. The study also shows positive attitudes for students of the Faculty of Educational Sciences towards blended learning.

Sawalha and et al. (2013) aim at uncovering the attitudes of Al-Balqa Applied University students towards the use of blended learning by faculty members in teaching university courses. The study sample consists of (90) students selected by the available sample method and among those taught by the blended learning strategy. To collect the required data for this study, a standardized interview instrument is used. The results of the study show that the attitudes of Al-Balqa Applied University students towards the use of blended learning by faculty members in teaching university courses are of a high degree.

Melton's study (2013) aims to assess students’ achievement and satisfaction in the mathematics course during their studies by the blended learning method compared to the traditional method at the Public Intermediate University of Southeast Georgia. Four classes are randomly selected as three classes are taught by the blended learning method, and one class is taught by the traditional method. The number of students in these groups is (251) students in the summer semester of the academic year 2009/2010. To achieve the objectives of this study, a questionnaire based on the theoretical literature related to blended learning is developed. The results of the study showed statistically significant differences in the level of satisfaction among students in favor of the teaching through the blended learning method. The study also shows that there are statistically significant differences in students’ achievement due to the teaching method in favor of the blended learning method.
Ayyad and Salih’s study (2013) reveals the effectiveness of blended learning and the motivation towards knowledge in developing the skills of using and producing high-media programs among technology students at Al-Aqsa University in Palestine. The research instruments consist of the observation card and the motivation scale. The study sample consists of all (64) male and female students of the major of educational technology. The results show the effectiveness of blended learning in developing the skills of using and producing high-media programs among the students of the experimental group. The results also show differences in the two degrees of developing the skills of using high-media programs and producing them between students of the experimental group with high cognitive motivation and students of the same group with low cognitive motivation in favor of students of high cognitive motivation.

Deghaidy & Nouby’s study (2013) aims to evaluate the effectiveness of the collaborative blended learning approach in Egyptian teacher education programs. The study has used a quantitative and qualitative approach to achieve its objectives. The study is applied to (26) teachers teaching at Cairo University in the pre-service teacher preparation program. The study members are divided into two experimental and control groups. The study instruments developed based on a review of the theoretical literature related to blended learning are applied before and after applying the qualification program to the two groups. The results of the study show that the achievement level of students in the experimental group is of a high degree after applying the qualification program based on the collaborative blended learning approach.

Akkoyunlu & Soylu’s study (2013) aims to test students' learning styles and their views on blended learning. The study is applied to (34) students at Hacettepe University in Ankara, Turkey. A questionnaire is also developed to find out the students’ views on blended learning and other learning methods and measure student achievement. The results of the study show that the students’ views towards blended learning processes such as ease of use of the web environment (Internet), assessment, and face-to-face learning differ according to the methods in which students learn. The results of the study also show that there are no statistically significant differences in students’ achievement attributable to learning styles.

Hamdi’s study (2010) aims at identifying the most important educational uses of the Internet among a sample of faculty members in Jordanian universities. The sample of the study consists of (306) teachers from the University of Jordan, Yarmouk University, and Mu'tah University. Concerning general uses of the Internet, the results of the study indicate that the e-mail service is ranked first with a rate of 88%, followed by the Internet. Concerning the educational uses of the
Internet, the results of the study indicate that personal research is ranked first, the student's research and teaching materials are ranked second with 66%, and teleconferencing is ranked last. Regarding the obstacles facing faculty members in using the Internet, the study has proved that slow network lines represent the difficulties of accessing the appropriate sites and the actual obstacles to use. In the area of the relationship of the degree of use of the Internet to the variables of the study, the results have proved the superiority of master’s holders in the degree of high usage compared to Ph.D. holders.

Jones & Jones’s study (2010) aims to evaluate the effectiveness of the e-learning management program using the WebCT system at the University of Southern California, USA. The results of a questionnaire analysis distributed (971) students and (44) university teachers using the program show that both teachers and students see that the (WebCT) program is useful in learning, and university teachers believe that the program helps to increase communication between the teacher and the student or the student with his classmate. Besides, it facilitates the learning process, especially the possibility of accessing enriching sources of the course material through the website. (33%) of the teachers have emphasized that the greatest benefit of using e-learning is their mastery of the necessary computer skills.

Hunbain’s study (2010) aims at describing the changing perceptions of faculty members affecting their use of technology in teaching at Purdue University in the United States as a result of their participation in the activities of a professional development project prepared to prepare tomorrow's teachers to use technology. Online questionnaires are used to collect the necessary data. Quantitative data shows that faculty members have incorporated a range of technology applications into their education. The qualitative results indicate the importance of motivating the faculty members, especially those who have negative attitudes towards using technology. To become effective users of technology in the classroom, professional development departments must pay attention to their educational needs and practices and provide them with effective technical support in the field of technological use. The study has also answered the following questions: What technology do the faculty members use in their education? What is the degree of their skills towards the use of technology in education? How can participation in professional development events affect faculty members’ perceptions and their use of technology in education? In light of the answers of (44) faculty members, the results of the study also show that there is a great use of technology applications in their teaching and that one of the most common uses in teaching faculty members is communicating with students via e-mail and using
In light of the previous studies, it is found that they have addressed the concept of blended learning. It is also clear that the previous studies are consistent with the current study in terms of its general topic, as it deals with the subject of blended learning in university education. However, it differs in dealing with the sub-topics. Jaser’s study (2018) addresses the reality of the use of faculty members at the Faculty of Education at Prince Sattam bin Abdulaziz University for blended learning. Whereas, Salim’s study (2018) examines the attitudes of Al-Balqa Applied University students towards blended learning at Al-Balqa Applied Academy from their point of view. Zahrani’s study (2016) examines the reality of the use of blended learning in teaching among faculty members at King Fahd University of Petroleum and Minerals.

Importantly, the diversity of the methodologies used is also noted, as some studies have used the quasi-experimental method, as in Diyabat (2013), Ayyad and Salih (2013), Deghaidy and Nouby (2013), and Akkoyunlu & Soylu (2013), while the other previous studies have used the descriptive survey approach. The current study benefits from previous studies in selecting the approach, study members, preparing instruments, and verifying their validity and reliability, procedures, and statistical treatment. This study is mainly distinguished by its discussion of the attitudes of faculty members at the University of Jordan towards the use of blended learning in university education in light of some demographic variables, which is ignored in previous studies.

Accordingly, it is noted that blended learning is the most important option that universities can take to develop modern educational methods, mainly aiming to make a qualitative leap in the educational outputs of the student as they are the most compatible with the requirements of effective learning. Given the importance of blended learning in university education, the idea of this study is to monitor the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in university education, identify the positive and negative attitudes of those attitudes, and work on developing appropriate recommendations to overcome any related problems and obstacles, if any.

7. Terms of the Study

Due to the nature of the study, the following terms are adopted and defined:

Blended learning: As defined by Feki (2011), it is an integrated system that incorporates the computer-based information sources.
traditional method of face-to-face learning with Web-based e-learning to guide and assist the learner as one of the modern approaches based on the use of education technology in designing new educational situations. Awad and Abu Bakr (2010) define it as a group of media designed to complement each other and enhance learning and its applications, and the blended learning program consists of several learning tools such as instant virtual collaborative learning software, online-based courses, self-learning courses, and electronic performance support systems, and learning systems management. Blended learning also blends several styles of learning such as the simultaneous and asynchronous types of learning.

Procedurally, it is defined as learning in which e-learning and its tools are blended with classroom learning (traditional) in one framework, using computer-based e-learning tools and networks in real classrooms where a faculty member meets with his students face to face at the same time to achieve the effective communication between them to improve students’ academic performance, meet quality standards, and gain their diverse needs.

Attitudes towards blended learning: It is a state of mental and emotional readiness formed from previous practices and experiences and has a directive effect on the individual's response to all topics and situations arousing his interest (Salim, 2018). Procedurally, it is defined in this study by the sum of the grades obtained by the faculty member on his responses in the Attitudes towards Blended Learning Scale prepared for this purpose.

8. Limitations of the Study

This study is conducted within various limits that limit the generalization process. This study is limited to faculty members at the University of Jordan in Amman-Jordan in the second semester of the academic year 2018/2019. The results of this study are determined by the nature of the study procedures in terms of designing the instruments, their validity and reliability, and the psychometric properties of the two study instruments.

9. Methodology of the Study

This section includes a description of the methodology used in the study, an account of its members, the study variables, the method for sample selection, the steps for developing the study instruments, the methods used to verify the validity and reliability of these instruments, the study
procedures, and the statistical processing necessary to analyze the data and attain the results.

**Method**

In this study, the descriptive survey approach is used by collecting information and data about a phenomenon, event, thing, or reality to identify the phenomenon, determine its current situation and identify its strengths and weaknesses to recognize the extent of the validity of this situation or the extent of the need to make partial or fundamental changes in it (Obeidat, Adas, and Abdel-Haq, 2016).

**Study Population**

The study population consists of (1836) faculty members in the scientific and humanities colleges at the University of Jordan distributed over all academic faculties, where the percentage of males is (1109) and the percentage of females is (727) according to the statistics of the Department of Faculty Members Affairs.

**Study Variables**

The variables used in this study are as follows:

1. **Independent Variables**

   Faculty type: it has two levels: scientific and humanities.

   Academic rank: it has three levels: assistant professor, associate professor, and professor.

   Experience: it has three levels: (less than 5 years, 5-10 years, more than 10 years).

2. **Dependent Variable**

   Attitudes of the faculty members towards employing blended learning strategy in university education.

**Study Sample**

The questionnaire has been distributed to all faculty members by designing it on a website (Google Drive), and the number of faculty members who have responded to the questionnaire is (510) faculty members with a percentage of (28%) of the total number approximately. Thus, the faculty members responding to the study instrument represent the study sample. Table (1) shows the distribution of the study sample according to the variables.

Table 1

*Distribution of the Study Sample According to the Study Variables*
<table>
<thead>
<tr>
<th>Variable</th>
<th>Levels</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Type</td>
<td>Humanities</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td>Scientific</td>
<td>376</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>510</td>
</tr>
<tr>
<td>Academic Rank</td>
<td>Assistant Prof</td>
<td>193</td>
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<tr>
<td></td>
<td>Associate Prof</td>
<td>173</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>144</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>510</td>
</tr>
<tr>
<td>Experience</td>
<td>Less than 5</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>5-10 years</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>More than 10</td>
<td>288</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>510</td>
</tr>
</tbody>
</table>

**Study Instrument**

Due to the nature of the study in terms of its objectives, curriculum, and population, an instrument is used, which is the attitude scale. This scale measures the attitudes of faculty members towards the use of blended learning in university education. The questionnaire is one of the most common research instruments used in the field of human sciences. To prepare the study, scientific references, research papers, dissertations, and previous studies are used. The following is a description of building the questionnaire and verifying its validity and reliability: and the study is based on scientific references, research, dissertations, and previous studies in preparing it. The following is a description of the structure of the questionnaire and the verification of its validity and reliability:

**Scale Construction**

To achieve the objectives of the study, a scale is designed to measure the attitudes and tendencies of the faculty member towards blended learning, as many studies in theoretical and educational literature related to this field were reviewed, such as Jaser’s study (2018). The attitudes scale in its final form consists of (30) items, where each item is given a graded scale of five degrees according to the "5-point Likert" scale. The respondent assesses his level of attitude on each item as follows: the grade (5) means that the faculty member strongly agrees, the grade (4) means that the faculty member agrees, the grade (3) means that the faculty member is neutral, the grade (2) means that the faculty member disagrees, and the grade (1) means that the faculty member strongly disagrees. The level of attitudes is classified into three levels: positive attitude, neutral
attitude, and negative attitude by dividing the range of numbers from 5 to 1 into three categories to obtain the extent of each level, i.e. (1.33). Accordingly, the levels are as follows: negative attitude (1- 2.33), neutral attitude (2.34-3.67), and positive attitudes (3.68-5).

**Attitude Scale Validity**

The validity of the Attitudes towards Blended Learning Scale is verified by presenting the scale to several validators specialized in the fields of curricula, teaching methods, educational technology, educational psychology, measurement, and evaluation at the University of Jordan. In light of the comments of the validators, some of the items are reformulated and some ambiguous items are excluded, as the validators have expressed their suggestions regarding the nature of the items, their language, and their appropriateness in measurement. Accordingly, the number of items has been reduced to (30) items instead of (45) items, along with deleting similar items.

**Attitude Scale Reliability**

The reliability of the attitude scale has been verified through the test-retest method by applying it to a sample of (20) faculty members from outside the study with a time difference of two weeks, where the reliability coefficient is calculated using the Pearson Correlation Coefficient. The reliability coefficient for the scale as a whole is (0.89) and is considered suitable for the study purposes. The internal consistency coefficient is also calculated using (Cronbach's alpha formula, where the reliability coefficient is (0.89), so the test has high reliability significance.

**Study Procedures**

The study procedures include preparing the study questionnaire with the help of educational literature, previous studies, and opinion polls on the worldwide network, presenting the questionnaire to a group of specialists for review, obtaining the number of faculty members at the University of Jordan 2018/2019, according to the statistics of the Department of Faculty Members Affairs, designing the questionnaire on the website (Google Drive), distributing the questionnaire to a sample outside the study sample and re-applying it after two weeks on the same sample, distributing the questionnaire to all faculty members through the private e-mail of each faculty member after obtaining approval from the university administration, collecting the questionnaires, taking and inserting the data into the computer, preparing the data for the analysis of the results, and carrying out the necessary and appropriate statistical processing.
Statistical Processing

To achieve the objectives of the study and analyze the collected data, several appropriate statistical methods are conducted by using Statistical Packages for Social Sciences (SPSS). Statistical measures such as the Pearson Correlation Coefficient are used to estimate the reliability. To answer the first question, arithmetic means and standard deviations are calculated at the item level. As for the second question, the t-test is used for the variable of faculty type. The one-way analysis of variance (ANOVA) test for academic rank and experience variables is also used.

10. Results and Discussion

This section presents the results and the discussion of the current study after applying the study instrument. The following is a presentation of the results of the study and its discussion according to the sequence of its questions:

- The first question states: What are the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education?

To answer this question, the arithmetic mean and standard deviation for the study instrument items measuring the faculty members’ attitudes towards employing blended learning strategy in university education are calculated as illustrated in Table (2).

Table 2

<table>
<thead>
<tr>
<th>Attitudes</th>
<th>SD</th>
<th>AM</th>
<th>NO.</th>
<th>Rank</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>1.21</td>
<td>3.99</td>
<td>22</td>
<td>1</td>
<td>I think that teaching through the blended learning method gives better results than the traditional method</td>
</tr>
<tr>
<td>Positive</td>
<td>1.35</td>
<td>3.95</td>
<td>2</td>
<td>2</td>
<td>I think a blended learning strategy is essential for every faculty member</td>
</tr>
<tr>
<td>Positive</td>
<td>1.21</td>
<td>3.93</td>
<td>1</td>
<td>3</td>
<td>I think the blended learning strategy (integrating technology into education) has changed education for the better</td>
</tr>
<tr>
<td>NO.</td>
<td>Rank</td>
<td>Items</td>
<td>AM</td>
<td>SD</td>
<td>Attitudes</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>-----</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>I think that the use of blended learning is one of the modern methods of teaching</td>
<td>3.90</td>
<td>0.40</td>
<td>Positive</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>I think that blended learning helps in developing students' scientific thinking</td>
<td>3.88</td>
<td>0.22</td>
<td>Positive</td>
</tr>
<tr>
<td>7</td>
<td>6</td>
<td>I think that blended learning enables students to learn a lot of information in a short time</td>
<td>3.87</td>
<td>0.32</td>
<td>Positive</td>
</tr>
<tr>
<td>8</td>
<td>7</td>
<td>I think blended learning can be used as an educational tool</td>
<td>3.85</td>
<td>0.25</td>
<td>Positive</td>
</tr>
<tr>
<td>14</td>
<td>8</td>
<td>I think the videos used in the blended learning has helped to understand the theoretical material</td>
<td>3.83</td>
<td>0.14</td>
<td>Positive</td>
</tr>
<tr>
<td>15</td>
<td>9</td>
<td>I enjoy using blended learning in teaching materials</td>
<td>3.81</td>
<td>0.00</td>
<td>Positive</td>
</tr>
<tr>
<td>16</td>
<td>10</td>
<td>I think the diversity in teaching methods and the use of blended learning makes me feel comfortable</td>
<td>3.80</td>
<td>0.11</td>
<td>Positive</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>I think using blended learning helps me clarify information in the course I study</td>
<td>3.79</td>
<td>0.15</td>
<td>Positive</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>I think using blended learning helps to connect concepts in a logical way</td>
<td>3.77</td>
<td>0.25</td>
<td>Positive</td>
</tr>
<tr>
<td>26</td>
<td>13</td>
<td>I am interested in using blended learning in the distribution of educational activities and exercises in a balanced manner</td>
<td>3.75</td>
<td>0.36</td>
<td>Positive</td>
</tr>
<tr>
<td>27</td>
<td>14</td>
<td>Along with the traditional teaching methods, I prefer to use electronic images and graphics in teaching students</td>
<td>3.74</td>
<td>0.21</td>
<td>Positive</td>
</tr>
<tr>
<td>28</td>
<td>15</td>
<td>I encourage my students to do homework and submit them using email and on paper</td>
<td>3.72</td>
<td>0.24</td>
<td>Positive</td>
</tr>
<tr>
<td>20</td>
<td>16</td>
<td>I think that using blended learning in teaching helps to overcome some educational problems</td>
<td>3.71</td>
<td>0.25</td>
<td>Positive</td>
</tr>
<tr>
<td>21</td>
<td>17</td>
<td>I prefer to use the traditional teaching methods such as books or traditional lectures in university education</td>
<td>3.70</td>
<td>0.36</td>
<td>Positive</td>
</tr>
<tr>
<td>12</td>
<td>18</td>
<td>I think that blended learning increases the motivation of the learner to learn</td>
<td>3.69</td>
<td>0.24</td>
<td>Positive</td>
</tr>
<tr>
<td>19</td>
<td>19</td>
<td>I think that using blended learning in teaching helps to overcome some educational problems</td>
<td>3.68</td>
<td>0.25</td>
<td>Positive</td>
</tr>
<tr>
<td>9</td>
<td>20</td>
<td>I think blended learning adds a new burden on the faculty member</td>
<td>3.65</td>
<td>0.02</td>
<td>Neutral</td>
</tr>
<tr>
<td>17</td>
<td>21</td>
<td>I think blended learning hinders my work as a faculty member</td>
<td>3.63</td>
<td>0.03</td>
<td>Neutral</td>
</tr>
<tr>
<td>11</td>
<td>22</td>
<td>I think blended learning is a waste of time and effort</td>
<td>3.60</td>
<td>0.31</td>
<td>Neutral</td>
</tr>
<tr>
<td>13</td>
<td>23</td>
<td>I need to generalize the blended learning experience because of its many advantages in the education process</td>
<td>3.58</td>
<td>0.25</td>
<td>Neutral</td>
</tr>
<tr>
<td>29</td>
<td>24</td>
<td>I am working on converting educational content in its traditional form into content with remarkable multimedia penetration</td>
<td>3.57</td>
<td>0.36</td>
<td>Neutral</td>
</tr>
<tr>
<td>30</td>
<td>25</td>
<td>I think blended learning helps achieve desired educational goals</td>
<td>3.57</td>
<td>0.24</td>
<td>Neutral</td>
</tr>
<tr>
<td>10</td>
<td>26</td>
<td>I prefer to use blended learning as it improves my performance</td>
<td>3.55</td>
<td>0.02</td>
<td>Neutral</td>
</tr>
<tr>
<td>18</td>
<td>27</td>
<td>I feel that blended learning limits students' thinking</td>
<td>3.54</td>
<td>0.20</td>
<td>Neutral</td>
</tr>
<tr>
<td>23</td>
<td>28</td>
<td>I do not trust students to learn through blended learning</td>
<td>3.52</td>
<td>0.11</td>
<td>Neutral</td>
</tr>
<tr>
<td>NO.</td>
<td>Rank</td>
<td>Items</td>
<td>AM</td>
<td>SD</td>
<td>Attitudes</td>
</tr>
<tr>
<td>-----</td>
<td>------</td>
<td>----------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td>-------------</td>
</tr>
<tr>
<td>24</td>
<td>29</td>
<td>I think that using multimedia (video, sounds, and animation) in some of the lectures is helpful</td>
<td>3.51</td>
<td>1.10</td>
<td>Neutral</td>
</tr>
<tr>
<td>25</td>
<td>30</td>
<td>I am interested in employing the Internet for teaching purposes, such as assigning students to prepare scientific research</td>
<td>3.50</td>
<td>1.02</td>
<td>Neutral</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Score</strong></td>
<td></td>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>3.71</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in Table (1) show that the faculty members’ attitudes towards employing blended learning technology in university education on the items of the study questionnaire have varied within positive and neutral attitudes. The table shows that (19) items get neutral positive estimates of attitudes where the item (22), which states “I think that teaching through the blended learning method gives better results than the traditional method” is ranked first in terms of attitudes, with arithmetic mean (3.99) and a standard deviation (1.21). However, item (2) which states “I think a blended learning strategy is essential for every faculty member” is ranked second in terms of attitudes, with an arithmetic mean (3.95) and a standard deviation (1.35). It was followed by item (1), which states “I think the blended learning strategy (integrating technology into education) has changed education for the better” has changed education for the better) with an arithmetic mean (3.93) and a standard deviation (1.40). The same table shows that (11) item get neutral estimates of attitudes where the item (25) which states “I am interested in employing the Internet for teaching purposes, such as assigning students to prepare scientific research” has the lowest estimate, with arithmetic mean (3.50) and a standard deviation (1.24), while the total score for the faculty members’ attitudes towards employing the blended learning strategy in university education is (3.71) with a standard deviation (1.12).

As put by the researcher, attitudes of faculty members towards the use of blended learning technology may be related to factors among faculty members such as job satisfaction, which arises from several reasons, which is reflected in its performance and its attitudes towards use in the classrooms. The researcher also believes that the experience possessed by faculty members makes them skilled in practicing modern teaching strategies, able to combine traditional and electronic teaching, identify the importance of possessing electronic test preparation skills, and deal with multimedia, thus saving time and effort.
Besides, the reason is due to the complete clarity of the picture in educational institutions, including the University of Jordan, regarding the appropriate way to start training faculty members on this type of learning, noting that the university always emphasizes its interest and keenness to adopt blended learning and benefit from it. The researcher also believes that most of the faculty members at the University of Jordan can use blended learning as a result of the nature of the specialized training courses that faculty members have joined at the University of Jordan, which have worked to improve their performance level and direct interaction with computer programs that do not require high skills to master them.

Importantly, the participation among faculty members, the exchange of experiences, the availability of computer laboratories and learning resource centers through the presence of electronic display rooms in most of the classrooms would raise a degree of enthusiasm and competition among faculty members in dealing with computers. The researcher also attributes the reason to the use of blended learning by the faculty members working to develop the skills of the teacher and the learner, help to improve their attitudes towards blended learning and raise the role of the professor to be an effective, positive and active role in the educational learning process.

The results of this study are consistent with the results of Salim (2018), which show that the attitudes of Al-Balqa Applied University students towards the use of blended learning are of a high degree. It also agrees with the results of Zahrani (2016), which conclude that the study members' estimates of the reality of the use of blended learning in teaching among faculty members at King Fahd University of Petroleum and Minerals are also of a high degree. It is in line with the results of Sawalha and Mahasna et al. (2013), which show that the attitudes of Al-Balqa Applied University students towards the use of blended learning by faculty members in teaching university courses are of a high degree as well. However, the results of this study differ from the results of Jaser (2018), which show that the degree of the research sample's use of blended learning is of a medium degree.

- The second question states: Are there statistically significant differences at the level of (a = 0.05) between the arithmetic means of the attitudes of faculty members at the University of Jordan towards employing blended learning strategy in higher education due to the variable of experience, academic rank, and the faculty type?

a. Experience Variable

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To answer this question, a one-way analysis of variance (ANOVA) test is used to examine the differences among the means of responses of the study members to the faculty members’ attitudes towards employing the blended learning strategy in university education. These results are as shown in Table (3).

Table 3

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of squares</th>
<th>Degrees of freedom</th>
<th>Mean squares</th>
<th>F Value</th>
<th>Level of sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>0.62</td>
<td>2</td>
<td>0.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>123.47</td>
<td>506</td>
<td>0.23</td>
<td>1.32</td>
<td>0.26</td>
</tr>
<tr>
<td>Total</td>
<td>124.10</td>
<td>508</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table (2) shows that there are no statistically significant differences in the attitudes of the faculty member towards employing the blended learning strategy in university education due to the experience, as the calculated value of (F) is (1.32), and this value is not statistically significant. These results indicate that the attitudes of the faculty member towards employing the blended learning strategy in university education do not differ according to the variable of experience (5 years and less, 6-10 years, and more than 10 years).

Also, the reason for this may be attributed to the interest of all faculty members at the University of Jordan to use the blended learning strategy, regardless of their experience in university education, and this interest may stem from several things such as having infrastructure of electronic administrative technologies at the university, holding periodic meetings and sessions on blended learning for faculty members, and developing training programs for the professional and technical development of faculty members. This is also because faculty members are required to use blended learning as a basis for academic, promotion, advancement, and development as an educational policy approved by the University's High Policy and Planning Committee.
Moreover, the reason may be that the modern perspective on learning imposes on the faculty members the necessity of conscious and continuous research on areas of improving the effectiveness of their performance and increasing its quality. It should be also noted that is no relation to the long or short experience of faculty members with this approach, which forces them all to enter this modern trend in pursuit of catching up with progress and technological development. The results are consistent with the results of Jaser (2018), which show that there are no statistically significant differences in the reality of using blended learning due to the experience variable. The results also agree with the results of Zahrani’s (2016) study, which indicates that there are no statistically significant differences in the reality of using blended learning among the faculty members at King Fahd University of Petroleum and Minerals to the experience variable.

**b. Faculty Type Variable**

To answer this question, the t-test is used to examine the differences among the means of responses of the study members to the faculty members’ attitudes towards employing the blended learning strategy in university education. These results are as shown in Table (4).

<table>
<thead>
<tr>
<th>Faculty Type</th>
<th>AM</th>
<th>SD</th>
<th>Calculated (T)</th>
<th>Level of Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific</td>
<td>100.42</td>
<td>12.47</td>
<td>1.57-</td>
<td>0.117</td>
</tr>
<tr>
<td>Humanities</td>
<td>103.18</td>
<td>12.28</td>
<td>1.57-</td>
<td>0.117</td>
</tr>
</tbody>
</table>

Table (4) shows that there are no statistically significant differences in the attitudes of faculty members towards employing the blended learning strategy in university education due to the faculty type, where the value of (F) is (1.57), and this value is not statistically significant. These results indicate that the attitudes of faculty members towards employing the blended learning strategy in university education do not differ according to the faculty type (scientific, humanities).

The reason may also be that the material capabilities have provided the important requirements for success in educational technology such as the blended learning in all
Jordanian universities, as the Ministry of Higher Education has emphasized its observance and interest in increasing its budgets to face technological challenges in all scientific fields, regardless of the faculty type whether scientific or humanities. This can also be explained by the awareness of the officials in both the Jordanian Ministry of Higher Education and the University of Jordan of the importance of blended learning, which is an integral part of the educational learning process and an educational necessity to achieve the desired teaching goals, diversify teaching methods, presenting topics interestingly and attractively, playing its vital role in planning, implementing, and evaluating the university teaching process, solving many educational problems, improving learning outcomes, saving time and effort, and instilling the values of self-reliance and self-confidence among university students. These results agree with the results of Zahrani's (2016) study, which indicates that there are no statistically significant differences in the reality of the use of blended learning in teaching among faculty members at King Fahd University of Petroleum and Minerals due to the faculty type variable.

c. Academic Rank Variable

To answer this question, a one-way analysis of variance (ANOVA) test is used to examine the differences among the means of responses of the study members to the faculty members’ attitudes towards employing the blended learning strategy in university education. These results are as shown in Table (5).

Table 5  
*Results of the One-way Analysis of Variance (ANOVA) to Test Whether There are Differences in the Faculty Members’ Attitudes towards Employing Blended Learning Strategy in University Education According to the Academic Rank Variable*

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of squares</th>
<th>Degrees of freedom</th>
<th>Mean squares</th>
<th>F Value</th>
<th>Level of sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1.31</td>
<td>2</td>
<td>0.65</td>
<td>1.86</td>
<td>0.15</td>
</tr>
<tr>
<td>Within groups</td>
<td>51.52</td>
<td>506</td>
<td>0.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>52.83</td>
<td>508</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table (5) shows that there are no statistically significant differences in the attitudes of the faculty member towards employing the blended learning strategy in university education due to the academic rank, where the calculated value of (F) is (1.86), and this value is not statistically significant. These results indicate that the attitudes of the faculty member towards employing the blended learning strategy in university education do not differ according to the academic rank (assistant professor, associate professor, professor). The reason may be because most of the faculty members at the University of Jordan are subject to conditions similar to cultural and academic experiences and the technological tools used, so this matter did not leave a difference between their estimates of their attitudes towards the use of blended learning in university education at different academic rank.

Besides, the researcher believes that the perception that faculty members consider for themselves regardless of their academic ranks helps them adopt modern attitudes that call for the use of blended learning and accepting them with positive feelings to improve their level. This may also be attributed to the fact that all faculty members have received training in universities and studied educational courses that increase their theoretical and scientific knowledge. This is also because faculty members of different specializations and scientific ranks are eager to apply everything new, positively affecting the educational process and producing effective results in the learning process. The results are consistent with the results of Jaser (2018), which show that there are no statistically significant differences in the reality of using blended learning due to the academic rank variable. These results also agree with the results of Zahrani's (2016) study, which indicates that there are no statistically significant differences in the reality of the use of blended learning in teaching among faculty members at King Fahd University of Petroleum and Minerals due to the academic rank variable.

11. Recommendation and Suggestions

In light of the results of the current study, the study recommends emphasizing the importance of blended learning and its applicability in the educational process, as it combines more than one teaching method, and meets the requirements of the educational situation, reconsidering university programs and curricula and their implementation strategies to understand the concepts of the electronic and technological revolution, integrate them with high-quality teaching methods, and present them to students, in a manner that meets the requirements of creativity, innovation, and the needs of individuals and society, conducting intensive training
courses in electronic learning in all its forms for faculty members within the framework of the higher education system as it is one of the modern attitudes in teaching required in the era of informatics, adopting the blended learning system within a basic learning educational system, supervised by researchers or technical observers and experts in electronic learning in all its forms and instructing them to provide recommendations for the needs of faculty members by assessing the strengths and weaknesses of their abilities and the technical skills and educational technological competencies they possess, and conducting more studies and research on the use of blended learning among faculty members and students in other Jordanian universities, alongside addressing other variables.

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