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# Problems Vocational Education Teachers Face In Employing E-Learning For The Basic Stage In Jordan From Their Point Of View

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## Abstract

This study aimed to identify the problems faced by vocational education teachers in the employment of e-learning for the basic stage in Jordan from their point of view. To achieve the study objectives, the descriptive-analytical approach was applied. The study sample consisted of (85) male and female teachers from Kasbat Irbid education schools for the academic year (2021-2022). A questionnaire was prepared by the researchers and consisted of (24) items, divided into three domains. The results revealed that the total mean of the problems faced by professional education teachers in the employment of e-learning for the basic stage in Jordan from their point of view was (3.59), rating medium. Also, the results showed that there were no statistically significant differences at ($\alpha = 0.05$) between the means towards the problems faced by professional education teachers in the employment of e-learning due to variables of gender and experience. In light of the results, the study recommended holding continuous training courses to develop teachers' skills by employing e-learning in teaching vocational education in general, and electronic assessment tools and methods in particular.

**Keywords**: problems, e-learning, vocational education teachers.

## Introduction

The vocational education curriculum is a basic resource and an important reference for students and teachers alike. This can be so by presenting it interestingly and excitingly, taking into account the intellectual, developmental and linguistic levels of students with a focus on experiences and activities related to daily life skills. It is a theoretical and practical approach, and it is concerned with employing information in the realities of daily life that contributes to their personal lives and pushes them towards professional development.

The Jordanian educational system has given special attention to vocational education. The subject of vocational education was adopted in the Ministry of Education in the early fifties of the twentieth century under various names, including the name of the vocational activity. Then, its emphasis and generalization of its teaching in the basic stage after the Educational Development Conference was held in 1987. The Ministry of Education stresses the need for vocational education curricula to include various vocational fields such as health, industrial, agricultural and hotel. This necessitated preparing the vocational education teacher differently from the preparation of other teachers (Ministry of Education, 2004). This requires the existence of serious training programs capable of covering all aspects of preparing this teacher due to the role played by the vocational education teacher and the nature of the tasks he performs calls for taking care of him. Also, training programs are needed to prepare and

rehabilitate him before and during service to improve his professional performance (Al-Daassin, 2016).

In light of the above, the Jordanian Ministry of Education adopted the integration of information and communication technology in its educational systems to benefit from the services it provides to improve education. Thus, teachers are offered training courses on the use of the Internet and computers. This would help teachers to employ the Internet and computers in teaching, including the International Computer Driving License (ICDL) and the Intel course. These courses aimed to help teachers employ e-learning and encourage students to be scientifically oriented and self-learning through research, communication and productivity strategies in education. They also aimed to focus on the means and tools that employ technology to highlight their creativity to improve and raise the level of education and performance for students and provide an interactive learning environment that does not depend on place and time (Al-Qutaish, 2015).

Given the circumstances that Jordan is experiencing now, represented by the spread of the Coronavirus, it resorted to e-learning. At the beginning of the academic year (2020/2021), the distance digital education plan has become existing and followed the system in most countries of the world to protect students and teachers from the risk of infection with the Coronavirus. The Ministry of Education allocated Darsak platform as a free Jordanian platform for distance learning. It provides school students from the first grade to the second grade with secondary education lessons through video clips scheduled according to the Jordanian education curriculum. It is provided by a distinguished group of teachers to make it easier for students to continue their learning and follow up on their study materials (Ministry of Education, 2020).

E-learning is one of the relatively recent models of education. Its use has begun to spread rapidly in various universities and schools until some universities and schools electronically offer integrated programs during the period of the spread of the Corona pandemic and the various quarantine procedures that it brought about and the accompanying suspension of traditional education. This made the focus on e-learning much more. It offers a set of solutions that contribute to changing and improving the features of the education system with its various elements. It provides effective alternatives and new ways of teaching and learning that help the teacher fulfill his new role. He became a guide and facilitator who puts the students at the center of learning. He also contributes to the development of students' roles in line with the next stage. The learner is no longer just a recipient of science and knowledge. Rather, he became a researcher and a discoverer. Hence, the concept of educational practices changed, and the features of the educational process began to move towards active learning capable of building future skills for students and addressing the digital divide imposed by acceleration and technical innovation (Al-Salmi, 2020; Martin, Budhrani, Kumar & Ritzhaupt, 2019).

E-learning seeks to create an interactive learning environment through new smart technologies. It also seeks to diversify the sources of information and experience and strengthen the relationship between parents and the school and between the school and the external environment. In addition, it supports the process of interaction between the parties of the educational learning process to exchange educational experiences, discussions and dialogues aimed at exchanging opinions using various means of communication. Further, it raises students' higher-order thinking abilities and gives teachers and students technical skills (Al-Qutaish, 2013).

E-learning is based on a set of objectives: providing students with the skills or competencies necessary to use communication and information technologies and providing teachers with technical skills to use modern technologies. It is also based on creating an interactive learning environment through new electronic technologies, diversity in sources of information and experience and educational service networks to organize and manage the work of schools. In addition, it is based on developing the role of the teacher in the educational process keeping pace with the continuous scientific and technological developments, strengthening the relationship

between parents, the school and the external environment and providing education that suits different age groups, taking into account their individual differences. Further, it depends on expanding the student's circle of communication through global and local communication networks and not limiting himself to the teacher as a source of knowledge while linking the educational site to other educational sites for the student to learn more. Moreover, it supports the process of interaction between students and teachers through the exchange of educational experiences, opinions and discussions aimed at exchanging opinions using social networking sites such as Facebook, Twitter, WhatsApp, wikis and blogs (Al-Ashiri, 2011).

Abdel Moneim (2010) and Abu Akl (2012) indicated that e-learning is of two types. In synchronous e-learning, the learner communicates with the teacher over the network directly. This makes the learning atmosphere closer to face-to-face education. Among its advantages, the learner receives immediate feedback from the teacher and exchanges information promptly and according to the learner's needs. However, synchronous e-learning has some disadvantages. It requires an expensive internet connection speed. It is also affected in the event of a power outage or any internet malfunction. The second type is asynchronous e-learning, in which the learner communicates with the educational material presented to him via computers or the network, or with the teacher via the network in indirect ways without the need for both of them to be present at the same time. Some advantages of this type are that the learner follows up at the appropriate time and according to his effort. He can also repeat the study of the material and refer to it at any time. In addition, it is not affected in the event of a power outage or disconnection of the Internet. However, it has some disadvantages. The learner does not receive immediate feedback. Also, he needs to motivate himself to study; it is based on self-learning.

Al-Ghamdi (2020) refers to the most important roles of the teacher in e-learning in providing various digital tools and resources for learning, designing educational activities and assessment tools. The teacher also encourages discussions in the discussion rooms and the classroom and follows up on students' progress and results. In addition, he provides feedback through comments and additional resources to support learning. As for the students' roles, they are summed up in discovering new knowledge through accessing various sources, completing the tasks required of them, benefiting from comments on them to support their learning and participating in discussions with the teacher and peers.

Accordingly, the role of the vocational education teacher has evolved from a mere tutor of the educational content to other roles that make the learner the focus of the teaching-learning process. Therefore, a vocational education teacher may be a director of the educational situation, a designer of the educational process, a producer of educational materials, a guide to the learner and a constant assessment of the educational system. This requires the vocational education teacher to use teaching skills that take into account the diverse needs of students and enhance the knowledge and practical side of students (Al-Saeeda & Ahmed, 2012). Despite the enthusiasm of teachers for e-learning, this type of education is not without some problems that face its application. There is a need for a solid infrastructure in terms of availability of devices, reliability and speed of communication and the Internet, and the need for specialists to manage e-learning systems. It also lacks the human factor in education and the inability of some teachers to use technology. In addition, there are difficulties in obtaining educational programs in the Arabic language and the learners' lack of knowledge of the skills of using modern technologies such as computers and browsing international communication networks. Further, teachers fear underestimating their role in educational processes and face difficulty applying assessment tools and methods. Moreover, society lacks awareness of this type of education and possesses a negative attitude towards it. Finally, old rules and regulations impede innovation and limit its spread (Abu Shawish, 2013). Al-Zahrani (2020) also adds that among the obstacles to e-learning are the difficulty of applying e-learning to some courses that need realistic viewing, lack of experience in using the e-learning

management system, poor planning of synchronous lessons and ease of penetration of educational content and tests.

For the success of the e-learning system to achieve maximum effectiveness, it is necessary to improve the working mechanism, create an interactive environment and use appropriate systems to manage the electronic system. The administrative cadres, teachers and students must also be trained to deal with them efficiently and effectively. In addition, the administrative body should follow up on evaluation, development and improvement, and solve all the problems that expose users to problems. Therefore, the current study came to identify the problems facing vocational education teachers in employing e-learning for the basic stage in Jordan from their point of view.

## Statement of the problem

The Jordanian Ministry of Education confirmed the adoption of e-learning as an alternative to face-to-face education after the Corona pandemic imposed school closures and social distancing. This has created an urgent need for schools to benefit from e-learning technology, and their need to activate e-learning through special electronic platforms within these emerging circumstances to prevent physical closeness or mixing between students on the one hand and teachers and students on the other hand for fear of the spread of the new Coronavirus ( Covid 19). Studies have also confirmed the low practice of e-learning by teachers in schools such as Hassouna (2020), Al-Zboun and Al-Rawahneh (2018) and Al-Dulaimi (2015). This may be due to problems that teachers face when employing e-learning. Today, despite the application of the distance learning system in teaching vocational education in light of the Corona pandemic, it has not been employed to the required degree.

## Research questions

The current study sought to answer the following main research question: What are the problems vocational education teachers face in employing e-learning for the basic stage in Jordan from their point of view?

Sub-questions: This study attempts to answer the following questions:

1. What are the problems that vocational education teachers face in employing e-learning for the basic stage in Jordan from their point of view?
2. Are there statistically significant differences at ($\alpha = 0.05$) between the means towards the problems vocational education teachers face in employing e-learning for the basic stage in Jordan from their point of view due to the variables of gender and experience?

## Objectives of the study

The current study aimed to identify the problems faced by vocational education teachers in employing e-learning for the basic stage in Jordan from their point of view. It also targeted the differences in the views of vocational education teachers about the problems they face when employing e-learning due to the study variables (gender, experience).

## Significance of the study

The significance of the study is clear because it comes at a time when the study is suspended; education worldwide has become dependent on e-learning systems. Users of these systems face several problems and challenges. Measuring teachers' viewpoints towards the problems that stand in the way of using e-learning systems will contribute to the availability of data and statistics that can help decision-makers to solve these problems. This study will also help in planning training programs that enable vocational education teachers to use e-learning systems and meet their needs in developing their professional practices.

## Key terms of the study

E-learning: is an educational system to provide educational or training programs to learners at any time and anywhere using interactive information and communication technologies such as (the Internet, social media and educational platforms). It aims to provide a multi-source interactive learning environment synchronously or asynchronously in the classroom without committing to a specific place, depending on self-learning and interaction between the learner and the teacher (Hassan & Salah, 2015, p. 140).

Problems of employing e-learning in the study context: They are the difficulties faced by the

e-learning system and impede its use from the point of view of vocational education teachers during the Corona pandemic in light of the scale of the study instrument "the questionnaire" prepared for this study.

Vocational education teacher: He/she is the teacher who is specialized in teaching vocational education to students of the basic stage from the fourth grade to the tenth grade and holds a university degree in the field of vocational education (Al-Smadi & Al-Hashimi, 2020, p. 688).

## Delimitations of the study

- Topic: The study was limited to the problems faced by vocational education teachers in employing e-learning.
- Place: The study was limited to public basic schools in Kasbat Irbid.
- Time: The study was implemented during the first semester of the year 2021/2022.
- Human: The study tool was applied to vocational education teachers in Kasbat Irbid Education Directorate.

-The results of the study are also determined by the instrument used, the validity and reliability indications that have been achieved and the degree of sincerity of the study sample's response to its items.

## Previous studies

The theoretical literature and previous studies were reviewed in various scientific journals and databases. A set of studies related to the subject of the study were reached and ordered from the most recent to the oldest. Al Rayah (2021) conducted a study aimed at identifying the reality of the use of e-learning in teaching chemistry at the secondary level during the pandemic of the emerging Corona Virus (Covid-19) from the point of view of teachers in the city of Abha in Saudi Arabia. The descriptive method was used. The study sample consisted of (112) teachers who responded to a 49-item questionnaire prepared by the researcher. The results showed that there was a high degree of agreement among the teachers on the reality of using e-learning in teaching chemistry during the coronavirus pandemic. The most important features of this employment were achieving social distancing, facilitating the management and practice of the educational process and providing various learning resources. Also, there were no statistically significant differences in the female teachers' perspectives regarding the use of e-learning in teaching chemistry at the secondary level due to the academic qualification or the number of years of experience. In addition, the degree of female teachers' approval of the obstacles that faced the use of e-learning in teaching chemistry at the secondary level was medium. The most important of these obstacles were the students' concern about conducting the exams electronically, the lack of internet services in some areas and the negative impact of e-learning on the slow internet in some places.

Al-Dmour (2020) aimed to reveal the physical and administrative obstacles faced by female teachers in their use of e-learning in the basic and secondary stages of education in Karak Governorate Directorate. The study used the descriptive method. The study instrument included a questionnaire distributed to a sample of (156) female teachers. The results of the study showed that the total degree of obstacles obtained a high degree. Also, there were no statistically significant differences between the basic and secondary schools in the physical obstacles. However, there were statistically significant differences between the basic schools and the secondary schools in the administrative obstacles and at the overall level of the scale in favor of the basic schools.

Beltekin and Kuyulu (2020) conducted a study aimed at knowing the students' point of view to assess the efficiency of the distance education system and its positive and negative aspects from public and private universities in Turkey. The descriptive survey method was used. A questionnaire was applied to (455) science students. The most prominent results, despite the circumstances of the Corona pandemic, were that they ensured the continuation of their educational activities without interruption by the distance education system. However, the lessons in the form of distance education were not as effective as face-to-face education. They were insufficient in terms of efficiency for students. Also, technical problems in the system negatively affected students' motivation to learn.

Sutiah, Slamet, Shafqat and Supriyono (2020) conducted a study that aimed to identify the students' view of assessing the distance

education system in the educational process in Indonesia. The research used the descriptive survey method. A questionnaire was applied to collect data on a sample of (750) students. The results showed that the students' view of assessing the distance education system in the educational process preferred face-to-face education rather than distance education. The students faced difficulties during distance education including lack of focus and lack of understanding of the educational material, interruption and weakness of the Internet. This increased students' concern about achieving learning outcomes.

Abu al-Khair (2019) aimed to identify the obstacles faced by the school administration in implementing e-learning in primary schools in Gaza Governorate in Palestine. The study was applied to a sample of (83) principals and (150) teachers. The results of the study indicated that the most important obstacles were the physical ones, followed by the technical obstacles and the human obstacles. The administrative obstacles scored last. The results also showed that there were no differences between principals and teachers regarding the most important obstacles in the application of e-learning in primary schools in Gaza Governorate. The results also showed that public schools face more obstacles than schools affiliated with the International Relief Agency (UNRWA) and private schools in applying e-learning.

Al-Shammari (2018) aimed to identify the reality of e-learning from the point of view of special education teachers in the State of Kuwait. The descriptive survey method through developing a questionnaire that consisted of (42) items. The study sample consisted of (258) male and female teachers of special education in Hawalli Educational District in the State of Kuwait. The study found that the degree of special education teachers' appreciation of the reality of e-learning came to a large degree. The domain of advantages of applying e-learning came in the first place with a high degree, followed by the domain of e-learning application requirements with a high degree of application and the domain of obstacles to the application of e-learning with a medium degree. The study also found that there were statistically significant differences in the responses of special education teachers to the reality of e-learning from their point of view due to the gender variable in favor of males. In addition, the study found that there were no statistically significant differences in the special education teachers' responses to the reality of e-learning from their point of view due to the variables of academic qualification and years of experience.

Al-Ajmi (2018) conducted a study aimed at identifying the problems faced by vocational education teachers in employing e-learning for the intermediate stage in the State of Kuwait from their point of view. The study sample consisted of (212) male and female teachers. The descriptive method was used. The study tool, in its final version, consisted of (34) items. The results of the study concluded that the degree of e-learning employment was moderate. The study also showed that there were no statistically significant differences due to the effect of gender. In addition, the study showed that there were statistically significant differences due to the effect of the academic qualification in favor of the bachelor's holders. Furthermore, it showed that there were statistically significant differences due to experience in favor of the experience of more than 10 years.

Mirzajani, Mahmud, Ayub and Wong (2018) conducted a study that aimed to identify the factors that influence the motivation of teachers in Mazandaran region in Iran and increase their motivation toward e-learning. The qualitative analytical descriptive approach was used by adopting field observations and interviews. The results of the study revealed that the most important factors that affect teachers' use of e-learning were sufficient support from principals for teachers to use information and communication technology and their guidance to them regarding using it in education. Other factors included their knowledge of information technology and their skills to use it. The results of the study also showed that one of the most prominent obstacles to e-learning was the insufficiency of technical and technical support.

Adjabeng (2017) conducted a study aimed at knowing the challenges of online distance education programs in post-secondary institutions in Ghana. The descriptive survey method was used. A questionnaire was applied to the study sample, which consisted of

students (309), teachers (14), and principals (8). The most prominent results were that the students were satisfied with the distance education program through the Internet in their institutions. However, there were still challenges of a high degree revealed by the study, which included the high cost of education and frequent power cuts. The study was suspended as a result of teachers' strikes and their lack of readiness for distance education and the need to restructure distance education programs.

The objectives of the previous studies reviewed varied. Some of them identified the views of principals, teachers and students and their readiness toward the use of e-learning (distance education) and its efficiency and assessment such as (Al Raya, 2021; Al-Dmour, 2020; Beltekin & Kuyulu, 2020; Sutiah, Slamet, Shafqat, & Supriyono, 2020; Abu Al-Khair, 2019; Al-Shammari, 2018; Al-Ajmi, 2018; Adjabeng, 2017; Mirzajani, Mahmud, Ayub, & Wong, 2018). The samples differed from the previous studies in terms of the target group. Some of the studies looked for the opinions of principals, teachers, and students (Abu al-Khair, 2019; Adjabeng, 2017). Some others searched only for the opinions of students (Beltekin & kuyulu, 2020; Sutiah, Slamet, Shafqat, & Supriyono, 2020). Others identified the opinions of teachers, (Al Raya, 2021; Al-Dmour, 2020; Al Shammari, 2018; Al Ajami, 2018; Adjabeng, 2017; Mirzajani, Mahmud, Ayub, & Wong, 2018). Studies in the field of e-learning were not limited to one category without another. There is a consensus between them and the current study in addressing the subject of e-learning. However, the current study was distinguished from previous studies in attempting to reveal the problems that vocational education teachers face in employing e-learning in Jordan. Previous studies have been utilized in formulating and defining the course of the current study problem and the appropriate procedures to achieve its objectives in selecting the curriculum and its tools. Also, they enriched the theoretical aspect, designing the questionnaire and determining the study sample, as well as making use of references and recent research, and benefiting from the results of previous studies in the importance and advantage of the current study.

## Method

### Research design

The descriptive-analytical method was used. It describes the phenomenon as it is in reality due to its relevance to the objectives of the study. The relevant data were collected, analyzed, extracted and interpreted.

### Population and sample of the study

The study population included all teachers (170) of vocational education for the basic stage in government schools in Kasbat Irbid District according to the statistics issued by the Department of Educational Planning for the year 2019/2020. The study sample was (85) male and female teachers, (50%) of the study population. They were chosen randomly.

### Instrument of the study

To achieve the study objective, the questionnaire was designed after reviewing the educational literature related to the topic. The opinions of specialists were considered in the development of a list that includes the problems that professional education teachers face in employing e-learning. The questionnaire included (24) statements in its initial version distributed into three dimensions: (problems related to the learning environment, problems related to teachers, and problems related to students).

### Validity of the instrument

The validity of the study instrument in its initial version was verified by specialized university professors in the College of Educational Sciences and educational supervisors, who numbered (13) experts. They were asked to ensure the integrity of language, and the degree of its suitability for the study. The amendments were made according to the observations agreed upon by (80%) of the experts.

### Reliability of the instrument

To ensure the reliability of the study instrument, it was applied to an exploratory sample of the study population. It consisted of (20) male and female teachers from outside the study sample with a time difference of two weeks. Then, the reliability coefficient was

calculated using the Pearson correlation coefficient. It reached (0.89) and is considered appropriate for the current study. The reliability coefficient of internal consistency was also calculated according to Cronbach's alpha equation, which amounted to (0.94).

## Correction of the study instrument

The statements of the questionnaire were given according to a five-point Likert scale in the correction as follows: degree (1) = very low, degree (2) = low, degree (3) = medium, degree (4) = high, and degree (5) = very high. Then, the arithmetic he adopted averages the means of the sample's responses were adopted to be an indication of the degree of estimation based on the following criterion to estimate the arithmetic means. The grades were divided into three levels (low, medium, high) according to the averages of the sample's answers for each statement as follows:
Highest- lowest/ number of level= 1-5/3=1.33
The estimates become as follows: (1-2.33) with a low degree, (2.34-3.67) with a medium degree, and (3.68-5) with a high degree.

## Variables of the study

a. The independent variables are:
1. Gender: it has two categories: (male and female).
2. Years of experience: it has two levels: (less than 10 years, 10 years or more).
B. Dependent variable: problems vocational education teachers face in employing e-learning for the basic stage.

## Statistical processing

To answer the study research questions, the appropriate statistical methods were adopted to analyze the data using the (SPSS) program. The Pearson correlation coefficient and Cronbach's alpha coefficient were used to verify the reliability of the study instrument. Also, means, standard deviations and ranks were used to answer the first research question. To answer the second question, means, standard deviations and analysis of multiple variances were used.

## Results and discussion

**Results of the first research question**: What are the problems that vocational education teachers face in employing e-learning for the basic stage in Jordan from their point of view? To answer this question, means, standard deviations and ranks were calculated for each domain. Table 1 displays the results.

Table 1. Means, standard deviations and ranks of the scale dimensions

| Rank | Dimension no. | Dimension | Means | Standard deviation | Level |
|---|---|---|---|---|---|
| 1 | 3 | Problems related to students | 3.63 | 0.78 | Medium |
| 2 | 1 | Problems related to the learning environment | 3.60 | 0.88 | Medium |
| 3 | 2 | Problems related to teachers | 3.54 | 0.83 | Medium |
| | | Overall | 3.59 | 0.79 | Medium |

Table 1 shows that the total means of the problems vocational education teachers face in employing e-learning for the basic stage from their point of view was (3.59) with a standard deviation of (0.79) and a medium degree. The dimension of problems related to students ranked first with a mean of (3.63) and a standard deviation (0.78) and a medium degree. The dimension of problems related to the learning environment ranked second with a mean of (3.60), a standard deviation (0.88) and a medium degree. Finally, the dimension of problems related to teachers came in the last order with a mean of (3.54), a standard deviation (0.83) and a medium degree. This result can be attributed to the fact that government schools adopt face-to-face learning, and they did not have plans to adopt e-learning. Therefore, it suddenly switched to e-learning. This reduces its experience in this

field and makes this type of education a novelty that needs practice to improve its level. Also, e-learning systems are relatively modern, especially the use of electronic educational platforms in student education. Students face difficulty in learning online due to the poor availability of technical skills that lead to improvement and increased practice. Also, students are unfamiliar with dealing with e-learning systems. There are also great challenges facing students in following up on their lessons, including those related to the speed of the Internet, consuming more packages to follow lessons across different platforms and applications, and the lack of the necessary smart devices. Often, more than one student in the same house depends on one mobile phone. As for the explanation for the fact that the dimension of problems related to teachers ranked last, it is because the use of the e-learning system is one of the basic tasks in the teaching profession and is related to the nature of teachers' work. It requires them to be able to use it and employ it in educational situations. In addition, teachers have good experience in e-learning skills, especially Internet skills and tools as a result of the spread of smartphones and their use by teachers in browsing and correspondence such as WhatsApp and Facebook. In addition, they use your lesson platform to send and follow up on students' assignments electronically, which are imposed by the current conditions resulting from the Corona pandemic, which required teachers to move towards distance learning. Teachers also underwent training courses at the Ministry of Education before and during their work in distance learning. The result of this question agrees with that of the study by Al-Shammari (2018), which found that the degree of teachers' appreciation of the obstacles to the application of e-learning was medium. However, the current result differs from the study of Al-Dmour (2020), whose results showed that the total degree of obstacles obtained a high degree. At the level of the two dimensions; the dimension of administrative obstacles and the dimension of material obstacles got a high degree. This result partially is in line with that of Abu al-Khair's (2019), study which showed that the most obstacles facing the application of e-learning were the material obstacles, followed by technical obstacles. Human obstacles and administrative obstacles were perceived the least.

The means and standard deviations of the study sample's responses were calculated on the statements of each field of e-learning employment problems separately. They were as follows.

**The first dimension: Problems related to the learning environment**

Table 2. Means and standard deviations of learning environment-related problems dimension statements in descending order

| Rank | No | Statement | Mean | Standard deviation | Level |
|---|---|---|---|---|---|
| 1 | 4 | Slow connection to e-learning platforms. | 3.81 | 0.95 | High |
| 2 | 7 | The high cost of designing and producing educational software. | 3.72 | 0.97 | High |
| 3 | 6 | The classroom environment is not suitable for using e-learning. | 3.70 | 1.05 | High |
| 4 | 5 | Textbooks are free of directives that emphasize the necessity of using educational aids and e-learning. | 3.68 | 0.91 | High |
| 5 | 8 | Inadequate design and production of educational materials. | 3.65 | 0.97 | Medium |
| 6 | 1 | Poor availability of technical support to address any emergency glitch during the learning process. | 3.64 | 0.93 | Medium |
| 7 | 3 | Not owning e-learning tools such as smart phones and computers. | 3.37 | 1.04 | Medium |
| 8 | 2 | Inadequate school environment for e-learning. | 3.23 | 0.84 | Medium |

| Rank | No | Statement | Mean | Standard deviation | Level |
|---|---|---|---|---|---|
| Overall | | | 3.60 | 0.88 | Medium |

Table 2 shows that the mean of the dimension of problems related to the learning environment came to a medium degree (3.60) with a standard deviation of (0.88). The statement of this dimension came in varying degrees, from high to medium. All means ranged between (3.23-3.81). Paragraph (4), "slow connection to electronic learning platforms" ranked first with a mean of (3.81), a standard deviation of (0.95) and a high degree. This is due to the fact that e-learning and its tools need a regular speedy Internet connection. Slow browsing is considered a factor in wasting time that causes annoyance and misses some opportunities to receive information through some electronic channels such as electronic educational platforms. Also, all students simultaneously enter the electronic educational platform. For example, Darsak platform can be accessed free of charge from six in the morning until four in the afternoon. Statement (2), "The school environment is not suitable for e-learning" ranked last with a mean of (3.23) and a standard deviation of (0.84) and a medium degree. This is due to the recent introduction of the e-learning system to the Ministry of Education. This entails a lot of financial obligations and burdens. This may result in some shortages in computer lab equipment and some services related to the e-learning system. Consequently, the Ministry of Education realized this aspect. It is currently working to provide several schools with computers and various technical equipment for school computer laboratories. In addition, it endeavors to establish a fiber-optic network to replace the current network. This will have an impact on overcoming the problems of slow and disconnected connections during use. The result of this dimension is consistent with that of the study by Al Raya (2021), whose results showed the most important obstacles that e-learning were negatively affected by the slow Internet in some places. The result also accords with that of the study by Sutiah, Salmaet, Shafqat and Supriyono (2020), which showed that students faced several difficulties during distance education, including internet outages and weakness. In addition, the result intersected with that result of the study by Mirzajani, Mahmud, Ayub and Wong (2018), whose results showed that the most prominent obstacles to e-learning from the teachers' point of view were insufficient technical support.

**The second dimension: Problems related to teachers**

Table 3. Means and standard deviations of teacher-related problems dimension statements in descending order

| Rank | No | Statement | Mean | Standard deviation | Level |
|---|---|---|---|---|---|
| 1 | 12 | Difficulty applying electronic assessment tools and means. | 3.71 | 0.99 | High |
| 2 | 11 | Lack of training courses offered to teachers in the field of electronic educational platforms. | 3.61 | 0.99 | Medium |
| 3 | 13 | Lots of work for the teacher. | 3.58 | 1.03 | Medium |
| 4 | 10 | Lack of guidelines for teachers on how to deal with technology. | 3.51 | 0.95 | Medium |
| 5 | 9 | Lack of awareness among teachers of the culture of e-learning and its use in teaching. | 3.49 | 1.12 | Medium |
| 6 | 14 | The teachers' poor proficiency in the English language. | 3.48 | 1.03 | Medium |
| 7 | 16 | Poor knowledge of teachers with the skills of using modern technologies. | 3.48 | 1.12 | Medium |

| Rank | No | Statement | Mean | Standard deviation | Level |
|---|---|---|---|---|---|
| 8 | 15 | Lack of material incentives for teachers who use e-learning. | 3.46 | 1.07 | Medium |
| Overall | | | 3.54 | 0.83 | Medium |

Table 3 shows that the mean of the problem dimension related to teachers came to a medium degree (3.54) and with a standard deviation of (0.83). All statements of this dimension came to a medium degree, except for statement (12), which came with a high degree. All means ranged between (3.46-3.71). Statement (12), "Difficulty of applying electronic assessment tools and means" ranked first with a mean of (3.71), a standard deviation of (0.99) and a high degree. This may be due to the fact that the teachers were not well trained in designing electronic tests and sending them electronically. Several teachers did not rely on electronic educational platforms to send exams. Also, some teachers were unable to design tests using the tools of electronic educational platforms due to their poor technical skills. In addition, teachers' load of teaching sessions is high. Further, they are required to submit written preparatory and assessment work. Statement (15), "Lack of material incentives offered to teachers who use e-learning", ranked last with a mean of (3.46) and a standard deviation of (1.07) with a medium degree. This may be attributed to the new teacher rank system, which requires the teacher to possess e-learning skills by obtaining specialized courses in the use of computers, including the ICDL course, and then passing a multilateral assessment to obtain financial incentives.

**The third dimension: Problems related to teachers**

Table 4. Means and standard deviations of student-related problems dimension statements in descending order

| Rank | No | Statement | Mean | Standard deviation | Level |
|---|---|---|---|---|---|
| 1 | 18 | Students rely on others to solve tests. | 3.81 | 0.94 | High |
| 2 | 21 | Some students do not have computers at home. | .379 | 0.94 | High |
| 3 | 23 | Poor students' English language proficiency. | .376 | 1.01 | High |
| 4 | 24 | Weak technical skills of students. | 3.74 | 0.93 | High |
| 5 | 22 | Students' misuse of e-learning tools when they use them alone. | .366 | 0.99 | Medium |
| 6 | 17 | The high financial cost needed by e-learning and its equipment. | .357 | 1.02 | Medium |
| 7 | 19 | Poor awareness among students of the importance of e-learning. | .346 | 1.07 | Medium |
| 8 | 20 | Lack of internet availability for some students. | 3.23 | 1.11 | Medium |
| Overall | | | 3.63 | 0.78 | Medium |

Table 4 shows that the mean of the dimension of problems related to students came to a medium degree (3.63) with a standard deviation of (0.78). The statements of this dimension came in varying degrees, from high to medium. All means ranged between (3.23-3.81). Statement (18), “Students’ dependence on others in solving tests” ranked first with a mean of (3.81), a standard deviation of (0.94) and a high degree. This may be due to the fact that the distance education system does not provide full control and protection for exams. Some students created groups on social networking sites (e.g., WhatsApp) to exchange answers. They also used search engines (e.g., Google) to solve the test and open the book while answering. In addition, all questions were objective, and this facilitates guesswork for students. Statement (20), "Lack of Internet availability for some students" ranked last with

a mean (3.23) and a standard deviation (1.11) and a medium degree. This may be due to the fact that the Ministry of Education has provided students in remote areas, who do not have tools to pursue distance education, with "tablets". Also, it provided them with Internet services to ensure the continuity of the educational process during the Corona pandemic period and the sustainability of education in remote areas where such tools and services are not available.

**Results of the second research question**: Are there statistically significant differences at ($\alpha = 0.05$) between the means towards the problems vocational education teachers face in employing e-learning for the basic stage in Jordan from their point of view due to the variables of gender and experience?

To answer this question, the means, standard deviations, and analysis of multiple variance were extracted for the study sample's responses according to the variables of gender, experience. Table 5, 6 demonstrate the results.

Table 5. Means and standard deviations of the sample's responses according to the variables of gender and experience

| Variable | Category | | Learning environment-related problems | Teacher-related problems | Student-related problems | Overall |
|---|---|---|---|---|---|---|
| Gender | Male | Means | 3.51 | 3.50 | 3.54 | 3.53 |
| | | Standard deviation | 0.81 | 0.79 | 0.83 | 0.76 |
| | Female | Means | 3.61 | 3.55 | 3.64 | 3.61 |
| | | Standard deviation | 0.84 | 0.84 | 0.89 | 0.81 |
| Experience | Less than 10 years | Means | 3.59 | 3.56 | 3.63 | 3.62 |
| | | Standard deviation | 0.81 | 0.81 | 0.87 | 0.79 |
| | 10 years or more | Means | 3.56 | 3.48 | 3.55 | 3.56 |
| | | Standard deviation | 0.89 | 0.88 | 0.90 | 0.83 |

Table 5 shows that there were apparent differences between the means of the problems facing vocational education teachers in employing e-learning according to the variables of gender and years of experience. To find out whether the apparent differences in the means were statistically significant at ($\alpha = 0.05$), multiple analysis of variance was used as shown in Table 6.

Table 6. Multiple variance analysis of the impact of gender and experience for each of the problem dimensions vocational education teachers face in employing e-learning

| Source of variance | Dimensions | Sums of squares | df | Mean of squares | F-value | Sig (talied-2) |
|---|---|---|---|---|---|---|
| Gender Hoteling=0.427 V=0.013 | Learning environment-related problems | 0.451 | 1 | 0.451 | 0.637 | 0.426 |
| | Teacher-related problems | 0.066 | 1 | 0.066 | 0.094 | 0.759 |
| | Student-related problems | 0.056 | 1 | 0.056 | 0.072 | 0.788 |
| | Overall | 0.257 | 1 | 0.257 | 0.395 | 0.530 |

| Source of variance | Dimensions | Sums of squares | df | Mean of squares | F-value | Sig (talied-2) |
|---|---|---|---|---|---|---|
| Experience Hoteling=.0853 V=0.004 | Learning environment-related problems | 0.108 | 1 | 0.108 | 0.153 | 0.696 |
| | Teacher-related problems | 0.297 | 1 | 0.297 | 0.424 | 0.516 |
| | Student-related problems | 0.062 | 1 | 0.062 | 0.080 | 0.778 |
| | Overall | 0.180 | 1 | 0.180 | 0.277 | 0.599 |
| Error | Learning environment-related problems | 220.584 | 82 | 0.709 | | |
| | Teacher-related problems | 217.946 | 82 | 0.701 | | |
| | Student-related problems | 241.037 | 82 | 0.775 | | |
| | Overall | 202.808 | 82 | 0.652 | | |
| Overall | Learning environment-related problems | 4302.828 | 84 | | | |
| | Teacher-related problems | 4168.266 | 84 | | | |
| | Student-related problems | 4274.250 | 84 | | | |
| | Overall | 4286.906 | 84 | | | |

*Statistically significant ($\alpha = 0.05$)

Table 6 shows that there were no statistically significant differences at ($\alpha = 0.05$) between the means towards the problems faced by vocational education teachers in employing e-learning due to the gender variable. This result can be explained by the teachers' commitment to employing e-learning. Everyone graduated from universities where the education system is gender-mixed. All were subjected to the same training programs. Therefore, no sign of gender was found. The reason may also be attributed to the fact that they are graduates of one educational system because education in universities is based on the constructivist theory of education. Knowledge in e-learning has unified foundations in software and multimedia. They also study the same course for the academic stage in which they are working. Both genders are subject to the same conditions, whether concerning their available capabilities in the field of professional development in the field of e-learning such as workshops or training courses, or the incentives offered to them in return for developing themselves in this field. Also, Table 6 shows that there were no statistically significant differences at ($\alpha = 0.05$) between the means towards the problems faced by vocational education teachers in employing e-learning due to the experience variable. This result may be attributed to the convergence of perceptions between the categories of experience. It goes back to the fact that there is nothing new in the increase in the number of years for teachers. Rather, it is estimated by years of service without the presence of new behavioral patterns that appear with the progress of experience. They practice the same tasks, roles and responsibilities and are repeatedly exposed to the same work burdens and problems and are surrounded by all the laws of the educational process. This is what made them enjoy equal degrees of harmony and adaptation.

## Recommendations

In light of the current results, the study recommended the following:

1. Holding continuous training courses to develop teachers' skills by employing e-learning in teaching vocational education in

general, and applying electronic assessment tools and methods in particular.
2. The need to keep up with electronic software and modernity concerning electronic educational platforms on an ongoing basis to overcome the problems faced by students and teachers during their use of electronic educational platforms.
3. The necessity of designing electronic guides for students to familiarize them with electronic learning platforms and how to use and benefit from them in the required manner, especially in exams.
4. Conducting studies on the extent to which teachers possess the competencies of e-learning and their attitudes towards them.

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