Obstacles in Distance Learning at the Secondary Level According to the Class and Gender Variables in the Light of Corona Pandemic, from the Students' Point of View, in Directorate of Education / Tafila Region

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Abstract

The study aims to identify the obstacles that face students in the distance e-learning according to the class and gender variables in the Corona pandemic in Tafila region in Jordan. The study population consists of a sample of 200 high school students who were selected randomly. A questionnaire consisted of two main areas was distributed to the study sample. The results reveal that there were no statistically significant differences at the level of significance (0.05 0.0α) between the estimates of the study sample for the obstacles of technical technologies and the e-learning infrastructure distance, and the student interaction for e-learning. In addition, the study shows that there were no statistically significant differences at the level of significance (0.05 0.0α) between the estimates of the study sample of the obstacles to distance learning in secondary level according to the class and gender variables in the Corona pandemic. The study recommends to hold workshops for male and female teachers on the ways to deal with remote e-learning, and to improve the work of Darsak platform in cooperation with teachers within the field. The study also recommends to conduct studies on continuity of work through learning and e-learning and that each school has to have its platform.

Keywords: e-learning obstacles, Coronavirus Pandemic

1. Introduction

The coronavirus crisis affected on the education sector; schools, universities, and educational institutions have closed their doors to reduce the chances of its spreading. That causes a great concern among members of this sector, especially students who are eligible for Al-Tawjihi exams.

This has prompted educational institutions to switch to e-learning as an alternative to direct learning and to integrate it into the educational process; especially after the learning process was directly affected by automation of industry and the development of artificial intelligence, the Internet of Things, and IT revolution. As a result, the integration of technology into the learning process has become a global orientation. https://www.aljazeera.net/opinions/2020/4/15/%D8%AA%

The spread of the coronavirus has set a record for children and young people who have dropped out of school since March 12, when 61 countries in Africa, Asia, Europe, the Middle East, North America, and South America announced the closure of schools and universities, The closure of 39 countries was implemented for their schools in all parts of the country. This has affected more than 421.4 million children and young people, and 14 additional countries have closed schools in some areas to prevent or contain the spread of the virus. According to the World Health Organization, if those countries resorted to the closure of schools and universities nationwide, the education of more than 500 million other children and young people would be disrupted. https://www.scientificamerican.com/arabic/articles/news/distance-learning-versus-covid19/

Jordan is one of the first countries in the region to respond to the crisis by imposing curfews and closing all educational institutions at the Kingdom's level. To sustain learning during the pandemic, the Ministry of Education has turned to distance learning tools, where officials make use of the materials available to the private sector to develop an educational portal called "Darsak", as well as two television channels dedicated to providing online lessons. These resources cover the main subjects of the curriculum. In addition, the Jordanian sports television channel has been restructured to broadcast educational programs specifically designed for public high school students "Al-Tawjihi". The Ministry of Education also supported teachers by introducing new procedures to facilitate

the transition to distance learning. A recent teacher training platform was launched to provide training courses on distance learning tools, blended learning, and education technology. https://blogs.worldbank.org/ar/arabvoices/covid-19-and-digital-learning-eparedness-jordan

E-learning has an essential role in the success of the learning process. The great technological development of computers, the Internet, and multimedia, such as audio, photo, and video, has made it possible for a large number to receive education with ease, and with minimal time and effort.

Fiser asserts that education faces many challenges, classified into three main dimensions: educational, administrative, and calendar. (Fiser, 2006)

2.1 Study Problem

Due to the current conditions of the coronavirus, educational institutions have been forced to switch to distance learning to ensure continuity of learning and the use of the Internet, smartphones, and computers in remote communication with students (Yulia, 2020).

Jordan has been forced to switch to e-learning, employing means of communication that were not previously used. The weak of e-learning infrastructure requires the adoption of specific software and the provision of Internet networks, smartphones, and computers for each student. Therefore, there is an urgent need to know the disabilities of distance e-learning at the secondary level and the difficulties students face in receiving information, as well as the extent to which they achieve the goals of education, their ability to meet student's needs and to create an environment that enriches face-to-face education.

2.2 Study Questions

The following main question emerged from the study's problem:

What are the obstacles to distance e-learning at the secondary level depending on class and gender variables in light of the coronavirus pandemic?

The following sub-questions emerged from this study:

Are the disadvantages of technical techniques and e-learning infrastructure at the secondary level varied in the light of the coronavirus pandemic from the perspective of students in Tafila directorate in Jordan?

Does the level of interaction of students for distance e-learning at the secondary level vary in light of the coronavirus pandemic from the perspective of students in Tafila directorate in Jordan?

Are there differences between the obstacles of technical techniques and the infrastructure of distance e-learning and the level of interaction of students for distance e-learning at the secondary level in the light of the coronavirus pandemic from the perspective of students in Tafila directorate in Jordan?

Are there differences between the averages of distance e-learning disabilities at the secondary level depending on class and gender variables in the light of the coronavirus pandemic from the perspective of students in Tafila directorate in Jordan?

2.3 Study Objectives

The study aims to:

1. Highlighting the disadvantages of technical technologies and distance e-learning infrastructure in high school in the light of the coronavirus pandemic

2. Highlighting students' level of interaction for distance e-learning at the secondary level in the light of the coronavirus pandemic

3. Know the disadvantages of technical techniques and infrastructure for distance e-learning and the level of interaction of students for distance e-learning at the secondary level in the light of the coronavirus pandemic

4. Knowledge of the disabilities of distance e-learning in high school in light of the coronavirus pandemic.

2.4 The Importance of the Study

The importance of this study can be summarized as follows:

Theoretical significance: The theoretical literature contained in this study can add new knowledge to researchers. It may provide the Arab Library with a new theoretical framework for e-learning in emergencies. Previous studies translated into this study may benefit those interested in distance learning and the results of its global application.

Practical importance: The results of this study benefit the schools of the Ministry of Education and educational institutions in Jordan by improving the performance of the e-learning system, Development of human resources, material capabilities, and trends in selected patterns of education, and making plans to move towards e-learning as an alternative to direct learning or both; The study tool can also be used to measure the disabilities of distance e-learning in secondary school according to class and gender variables in the light of the coronavirus pandemic from the perspective of students in the directorate of Tafila in Jordan in other educational institutions. The research is important because it is contemporary to the real phenomenon of the spread of coronavirus. The results of this study can be used in similar phenomena such as wars and crises.

3. Definitions of Terms

E-learning:

Al-Mubarak (2003) defines the concept of e-learning as a method of learning in the delivery of information to the learner based on modern technologies of computers, the Internet, and multiple media such as CD-ROMs, educational software, e-mail, dialogue, and discussion arenas. (Al-Mubarak, 2003).

Berg, & Simonson (2018) define it as an interactive system linked to the learning process, based on a digital electronic environment that exposes students to courses and activities through electronic networks and smart devices. (Berg & Simonson, 2018)

The researcher defines it as the planned and meaningful process in which school students interact with their teachers to achieve specific goals and results by employing educational software, electronic networks, and smart devices to ensure physical distancing during the coronavirus outbreak.

Coronavirus (COVID-19):

It is a family of viruses that may cause human disease, affects the respiratory tract ranging from common colds to more severe diseases such as the Middle East respiratory syndrome, and severe acute respiratory syndrome (SARS), and is characterized by its rapid spread among individuals (WHO, 2019).

Obstacles to e-learning: Challenges that may prevent it from being set with its goals. Hamdan (2007) defines it: Lack of awareness of this type of learning in society and hence a negative view of it that limits its goals and advantages, the insufficient conviction of the teacher and learner, lack of concrete means, and a significant shortage of educational institutions about the main techniques of e-learning. (Hamdan. & Alobaidi, 2007)

Alkafi (2009) added: the lack of clarity of e-learning systems and methods, the lack of availability of experts in e-learning management, and the lack of privacy and confidentiality where content and exams are compromised. (KAFI, 2009)

the optional obstacles are: the obstacles and difficulties faced by students and prevent the application of e-learning from students' perspectives, and reduce the chances of achieving the goals effectively. Or the degree to which the respondent gets by answering the study tool.

4. Theoretical Framework and Previous Studies

4.1 E-learning

The use of the Internet in the educational process goes back to before 2000 because most universities use so-called "learning management systems". Under the coronavirus crisis that the world is witnessing, most educational institutions have moved towards e-learning as an alternative to ensuring the continuity of the educational process. The use of online video chat apps has increased markedly, most notably "Zoom," "Google," "Meeting" and... etc.

Despite the advantages of e-learning, many have questions about its effectiveness as a holistic alternative to traditional methods and the willingness to do so. What are the challenges facing e-learning? Therefore, the Internet has been used in educational institutions and schools, universities have Internet sites, and the perception of the Internet, smartphones, and computers has changed, becoming seen as an essential educational tool, with the number of schools and universities connected to the Internet increasing by the day. The results of the Google search revealed that there were more than 400 Online universities, that more than 35,000 teachers and 250,000 students were using e-learning before the coronavirus pandemic, and that there were university portals and more than 1700 online university courses in the United States only. (Koumi, 2006).

The increasing number of teachers and students using computers, the Internet, and smartphones in the educational process is due to the characteristics and positive effects of e-learning. The study of Edwards and Fritz (1997) revealed that e-learning is fun and exciting, achieves desired educational outcomes, and improves students'

acquisition of concepts. (Fritz, 1997)

E-learning is defined as online education, using modern electronic techniques to access all educational materials beyond the limits of the traditional class (Koumi, 2006).

Basilaia, and Kvavadze (2020), believe that e-learning is a structured process aimed at achieving educational products using technological means that provide voice and image that interact between learner, content, and educational activities promptly. (Basilaia, & Kvavadze, 2020)

In the researcher's view, e-learning is the process of replacing distance learning using electronic media with face-to-face interaction in classrooms to achieve planned educational outcomes.

One of the most common terms used to express and describe it is distance learning, computerized e-learning, in the form of online meetings, in which students can interact with their teachers while receiving tasks and duties from them. (eLearning NC, 2018)

There are many benefits and advantages of e-learning, which make it superior to traditional teaching methods, as follows:

- Reduce costs, as it saves the costs of establishing new classrooms for courses and seminars, and the cost of electricity, water, and other materials used in school, as well as no need to go to schools and educational centers, which would reduce mobility costs.

- Available to all individuals and age groups, all individuals, regardless of age, can benefit from conferences, meetings, and online courses, acquiring new skills and experiences beyond traditional school constraints.

- Flexibility is not related to a given time, so individuals can learn at any time they want according to the time appropriate for them.

- Invest time and increase learning, where useless interactions between students are reduced by reducing chat and excess questions that waste time. The amount of what a student learns increases without any disruptions or hindrances.

- Make education more structured and impartial, as well as evaluate tests impartially and fairly, and accurate follow-up to each student's achievements.

Eco-friendly, where there is no use for papers and pens that may harm the environment when disposed of. (Ferriman, 2014). In addition, e-learning will be the prevailing pattern of education in the future. The current generation is characterized by its attachment to smartphone devices and the use of different applications. Thus, the integration of technology into the educational process has become a global orientation, and interaction with educational activities through mobile devices is a catalyst for learning rather than just traditional study (Yulia, 2020).

Despite the many benefits of e-learning, it has some downsides as follows:

- Reliance on technology greatly, although e-learning is available to all individuals, many may not have smartphones, computers, or a communication network.

- Low level of motivation and regulation, because e-learning is subjective, some people may find it difficult to motivate themselves to learn, resist playing and organize the learning process.

- Isolation and loneliness, arise from students interacting with computers and smartphones rather than communicating and interacting directly with each other. (Hetsevich, 2017).

4.2 Coronavirus

In March 2020, no teacher was notified that e-learning would be the only gateway for students to achieve our educational goals arising from the coronavirus crisis. It has led to intensive e-learning courses for teachers and various means of learning to maintain continuity of learning and education and achieve the goal for the 2019/2020 academic year and achieve physical distancing between students to maintain their safety from coronavirus infection. (Yulia,2020), (Basilaia, & Kvavadze, 2020).

The virus "COVID. 19 is part of a new strain of the coronavirus family that had not previously infected humans, it initially emerged in the Chinese city of Wuhan, then, it has spread to other countries of the world, including Jordan, it is a viral disease that affects the respiratory system in humans at different ages, The most affected and vulnerable are the elderly and chronically ill, it has spread among people by mixing with infected people, volatile spray during coughing and sneezing, and touching the infected person himself or his tools. one of its prominent symptoms is fever,

the other symptoms are high temperature, coughing with tight breathing, general stress, vomiting, diarrhea and runny nose in addition to sore throat, and lack of smell. Red Crescent clarified that preventive measures and protective methods that help reduce the risk of contracting this virus are:

• Avoid contact and keep a physical distance from people, relatives, or anyone with symptoms of common cold or flu, and avoid touching the eyes, nose, or mouth.

• Constantly cleaning hands with soap and water, using an alcoholic hand sanitizer when out of the house, or touching public facilities and others.

• Use the napkin when coughing, sneezing, and discarding immediately after use.

• Sanitize all things purchased before entering the house, and continuously disinfect surfaces in the house and office. (Yulia, 2020)

Adherence to the instructions of the Ministry of Health in Jordan has prevented all forms of physical convergence between citizens, in markets, mosques, clubs, universities, and schools under the Ministry of Education, and all schools in the Kingdom have adhered to physical distancing, schools and universities have been closed and education has become remotely e-learning (Basilaia, Kvavadze, 2020), (Yulia,2020)

4.3 Previous Studies

E-learning has received a lot of studies. Through the review of educational literature, the researcher monitored the most important of these studies:

Studies on e-learning in light of the coronavirus pandemic

- Aljaser (2019) Study aims to recognize the effectiveness of the e-learning environment in developing academic achievement and the trend toward English language learning in elementary fifth-grade students. The e-learning environment was designed, tested, and measured to assess the trend toward learning English, and the semi-experimental curriculum was applied to a sample of fifth graders, divided into a control group studying through the traditional method, and an experimental group studying through the e-learning environment. The results of the study showed statistically significant differences in favor of the pilot group in both the post-attainment test and the trend measure toward English learning. (Aljaser,2019)

- Bashir's (2019) study aimed at modeling the interaction of e-learning and the learner's satisfaction with continuous learning techniques in Ugandan tertiary education institutions, the study was based on the survey method, studied the effectiveness of e-learning linked with the learner's satisfaction with continuous learning techniques, collected data using a 28-paragraph questionnaire and applied to 232 learners. The results showed that e-learning interaction consists of a tripartite structure, the learner's interface, feedback interaction, as well as learning content. (Bashir, 2019)

- The study conducted by Draissi, and Yong (2020) aimed at knowing the plan to respond to the outbreak of COVID-19 and to implement distance education in Moroccan universities, researchers examined various documents consisting of daily newspaper news articles, reports, and notifications from the universities' website. The study used a content analysis method, and the study's findings indicated that what worry is that the COVID-19 pandemic challenging universities to continue overcoming the difficulties faced by both students and professors, investing in scientific research and their ongoing efforts to detect the vaccine. The new teaching methods were based on increased student autonomy, and additional duties were reserved for teachers to maintain the momentum of their work from home, providing free access to a few paid e-learning platforms or databases. (Draissi, and Yong, 2020)

- Sahu (2020) conducted a study aimed at finding out the impact of the closure of universities due to the coronavirus (COVID-19) on the education and mental health of students and faculty, the novel coronavirus (COVID-19) originated in China's Wuhan has spread rapidly around the world, and a large number of universities have postponed or canceled all university activities. universities have taken intensive measures to protect all students and staff from the highly contagious disease. Faculty members have moved to the e-teaching system, the research highlights the potential impact of the spread of COVID-19 on education and students' mental health. The results of the study showed that universities should implement laws to slow the spread of the virus. Students and staff should receive regular information through email, the health and safety of students and staff should be a top priority, and that counseling services are available to support students' mental health, authorities have a responsibility to ensure food and housing for international students, and faculty members have a careful interest in technology to make students' experiences with learning rich and effective. (Sahu,2020)

- Yulia (2020) conducted a descriptive study aimed at illustrating how the coronavirus pandemic affects the

restructuring of education in Indonesia. The study explained the types and strategies of learning that teachers in the world use online due to the closure of universities to curb the spread of the coronavirus pandemic, The study also demonstrated the advantages and effectiveness of using online learning, The study concluded that there is a high-speed impact of the coronavirus pandemic on the education system, as the traditional education style has declined to spread instead of online learning because it supports learning from home and thus reduces the mixing of individuals with each other, and reduces the spread of the virus. The study demonstrated the importance of using different strategies to make Internet education easier and better. (Yulia,2020)

- the study of Basilaia and Kvavadze (2020) aimed at studying the experience of moving from schooling to online learning during the coronavirus pandemic in Georgia, it was based on the statistics of the first week of teaching in a private school and its experience in moving from face-to-face education to e-learning during the coronavirus pandemic, where it discussed the results of education online and the EduPage and Gsuite platforms were used in the educational process. According to statistics from the first week of the online teaching process, the researchers found that the transition between traditional and online education was successful. The system and skills acquired by teachers, students, and school management in the post-pandemic period can be utilized in different situations such as those with special needs who need additional hours, through increased effectiveness of group teaching or increased student autonomy and access to new skills. (Basilaia & Kvavadze, 2020)

4.4 Studies on obstacles to e-learning

- Al-Mezeen's (2015) study aimed at identifying and achieving the most significant obstacles to the application of e-learning in Palestinian universities from the student's point of view and ways to reduce them in the light of some variables; The researcher used the analytical descriptive method. A questionnaire consisting of 48 paragraphs was used and applied to the study sample of 281 students (10%) of humanitarian and applied colleges at the Islamic University and Umma University in Gaza governorates. The study yielded the following results: The average overall response to all areas of the questionnaire for the sample of the study was 3.76 while the relative weight of all areas of the questionnaire was 75.24%. The study's findings found that the most significant impediments to e-learning were:

- The relative weight of the impediment "students preoccupation in unrelated sites to e-education" has reached (84.34%), followed by "The size of the university curriculum makes the university professor inclined to traditional education" (083.6%), followed by "the belief of some that e-learning eliminates their role in the teaching process" (80.64%), followed by "small number of devices commensurate with the number of students" (080.6%), followed by "lack of cooperation among universities in exchanging experiences for the development of e-learning" (79.30%), which are large percentages.

- Statistically, significant differences exist at an indicative level ($α ≤ 0.05$) between the study sample estimate averages for impediments to the application of e-education in Palestinian universities by variable type of education (traditional, open) in favor of open education, while there are no significant differences by the variable: (sex, college, specialization). In light of the findings, the researcher recommends the following:

- Activation of academic advising by e-learning centers for teaching staff and students alike.

- Strengthening cooperation between universities in the exchange of experiences for the development of e-education, especially between Islamic University and Umma University. (Al-Mezeen, 2015)

- The study of Yassin and Melhem (2011) aimed at detecting obstacles to the use of e-learning faced by teachers of the Directorate of Education schools in the first directorate of Irbid. The researchers used the analytical descriptive approach and the study sample reached (186) teachers, and the results showed that all of the tool's paragraphs constituted impediments to e-learning, and there were significant differences regarding e-learning constraints attributable to the sex variable, as well as the absence of significant differences in e-learning impediments, attributable to the scientific qualification variable, and years of experience. (Mahmud & Melhem, 2011)

The study of (El-Hersh, Ayed, Muflih, Mohammed, Aldhoon, and Mamoun, 2010) aimed at detecting obstacles to the use of the e-learning system from the perspective of secondary teachers in Al-Koura district. To achieve the study's objectives, a questionnaire was developed from 36 paragraphs, spread across four areas. The sample of the study consisted of (47 male teachers and 58 female teachers) selected randomly during the first semester of the 2008/09 school year. After collecting and analyzing data using descriptive methods and conducting a tripartite analysis and a Chevé test, the findings indicated that the obstacles related to teachers came at first rank, followed by those related to management, then those related to Infrastructure and basic equipment, and those related to students came in the last rank. The findings also referred to significant differences attributable to sex in the area of infrastructure constraints and basic equipment in favor of males. As the results showed, there are significant

statistical differences attributable to the scientific qualification in the field of student-related handicaps in favor of those who have a Master's degree or above, While there were no significant statistical differences attributable to the impact of training courses in all areas, the researchers recommended that training courses provided by being the Ministry of Education reconsidered and that the infrastructure and its technology be improved in schools. (El-Hersh et al., 2010)

- Anderson (2008) conducted a study to identify the most prominent challenges in Sri Lanka's e-learning course. This study involved (1887) persons. The information was collected from 2004 to 2007, this study covers the views of students and faculty members. The quantitative method was used to identify the most important factors, followed by a qualitative analysis to explain why these factors were important. The study identified seven major challenges in the following areas: student assistance, flexibility, teaching and learning events, inputs (infrastructure and networking), academic trust (student quality, subjects previously taught), Vernacular (language), and trends. (Anderson,2008)

- (Hussain, Jebreen, Hussain, Anas, Alshaikh, and Asem, 2006) aimed at detecting obstacles to the use of e-learning from the perspective of Hashemite University students. The study sample was 600 bachelor's students and the questionnaire consisted of 39 paragraphs. The results showed that all the paragraphs of the tool were obstacles to e-learning, and there were statistically significant differences attributable to university-related, administrative, and academic constraints, to student and tool-related constraints as a whole in favor of scientific colleges. There are no statistically significant differences in e-learning constraints attributable to all areas and the tool as a whole. The results of the study showed statistically significant differences attributable to sex in favor of females across all areas of study and tools as a whole. The results of the study also showed statistically significant differences in the Internet's expertise variable between those with significant and little expertise, and those with medium and little expertise in favor of those with little experience in the first and second areas and the tool as a whole. It also showed statistically significant differences between those with significant experience in favor of those with little experience in the third area, and those with little and medium experience in favor of those with little experience in the fourth area. (Hussain et al., 2006)

- Naida's study (2003) aimed at recognizing and understanding "faculty orientations towards the use of e-learning"; to investigate the extent to which a group of faculty members use and accept learning methods at Manchester Metropolitan University, and how they can be used to support the university's teaching process. The study showed that there was a degree of awareness among teachers, with some reluctance to adopt the system, owing to lack of institutional support, lack of time and resources to implement the system, as well as lack of information, knowledge, and expertise in e-learning technology. (Naida, 2003)

5. Method and Procedures

5.1 Study Methodology

In pursuit of the study's objective; this study used the analytical descriptive approach, which is the most appropriate approach for such studies. The questionnaire was used as means of collecting data on study variables and statistically analyzing them to get logical and objective answers to study questions.

5.2 Study Population

The students of junior high and senior high grades (Tawjihi) in Tafila directorate schools.

5.3 Study Sample

The study sample consisted of 200 high school students of junior high and senior high grades (Tawjihi), they were selected in a simple random manner and table 1 shows the distribution of the study sample individuals according to their variables:

Table 1. Distribution of the study sample

Females	Males	Class
50	50	Junior high
50	50	Senior high (Tawjihi)
100	100	Total

5.4 Study Tool

The study tool has been developed by drawing on previous literature on the subject, and to achieve the current study on "Obstacles to distance e-learning at the secondary level depending on class and gender variables under the coronavirus pandemic from the perspective of students in Tafila education in Jordan". The study tool has been used to achieve the goal, and the measure is from two main areas: (impediments to technical techniques and e-learning infrastructure, and students' level of interaction with remote e-learning impediments); The response ladder was graded according to the Lycert quinquennial scale, as follows: (always = 5, sometimes = 4, often = 3, rarely = 2, never = 1). The tool consisted of (37) paragraphs measuring "the obstacles of distance e-learning in secondary school according to class and gender variables in the light of the coronavirus pandemic from the perspective of students in Tafila education in Jordan.

5.5 Tool Validity

5.5.1 Content Validity (Judgment)

The authenticity of the content of the study tool on the obstacles to distance e-learning at the secondary level has been verified according to class and gender variables in the light of the coronavirus pandemic from the perspective of students in Tafila directorate of education in Jordan, by presenting it to a panel of 12 judges specialized in counseling and education, asked them to assess the degree of appropriateness of the paragraphs of the questionnaire of what they were designed to measure, their affiliation with the dimension to which they belong, the degree of clarity of the language wording of the paragraphs, and the proposal of appropriate amendments. The judges' opinions were accounted for, receiving 88% positive evaluation.

5.5.2 The Stability of the Study Tool

To verify the stability of the study tool, the researcher used two methods; First is (test-retest); The researcher applied the tool to a survey sample of 20 students outside the study sample. The stability factor was calculated using the Pearson correlation coefficient and table 2 shows this:

Table 2. Pearson correlation coefficient

NUM	Study dimensions	stability factor	level of significance
.1	The technical technology and infrastructure obstacles of e-learning.	0،82	0,01
.2	The level of the student's interaction with distance e-learning	0،85	0,01
Grand total		0,83	0,01

level of significance (α ≤ 0.05)

the second is the Alpha Cronbach coefficient's total scale stability is calculated as shown in table (3)

Table 3. Alpha Cronbach coefficient values of the study dimensions

NUM	study dimensions	Alpha Cronbach coefficient
1.	The technical technology and infrastructure obstacles of e-learning.	0،81
2.	The level of the student's interaction with distance e-learning	0،84
	Grand total	0،82

5.6 Statistical Processing

-Arithmetic averages and standard deviations were used to verify the validity of the first and second assumptions

-One Way ANOVA analysis was used to verify the validity of the third and fourth imposition.

6. Results and Discussion of the Study

First assumption:

"In the light of the coronavirus pandemic, do the obstacles of technical techniques and distance e-learning infrastructure at the secondary level vary from students' perspective in Tafila education in Jordan?

to answer this assumption, averages and standard deviations of the responses of the members of the study sample were calculated. " As shown in table (4)

Table 4. Means and standard deviations of technical technologies and infrastructure constraints of distance e-learning

Num	Field: The constraints of the level of interaction of students for distance e-learning	Mean	standard deviation	level	order
1	I was trained to use e-learning by giving me some instructions to enter Darsk platform through advertisements	3.28	1.295	moderate	11
2	Techniques used in Remote e-learning to access Darsk platform are effective and cover all aspects of the curriculum	3.79	1.132	high	6
3	Sending and receiving educational materials for distance e-learning without technical impediments	2.91	1.242	moderate	14
4	e-learning technology contributes to the continuity of the success of the educational process in the light of the coronavirus pandemic	2.83	1.343	moderate	15
5	Easy access to the website approved by the Ministry of Education for distance e-learning	3.31	1.464	moderate	10
6	The e-learning system provides me with direct communication with the staff and faculty	3.83	1.152	high	5
7	The Ministry provides appropriate technical support to facilitate the use of technology in my educational material	3.68	1.129	high	7
8	Logistical support from the Ministry of Education is available to follow up on my educational process.	3.98	1.096	high	1
9	A guide has been provided to use my educational material website.	3.37	1.308	moderate	8
10	Internet speed is suitable for broadcasting lessons via educational platforms without interruption	2.67	1.327	moderate	17
11	Power outages while broadcasting lessons via educational platforms	2.72	1.358	moderate	16
12	I find it difficult to follow the platform because of the lack of devices such as smartphones or laptops	3.14	1.203	moderate	12
13	lack of expertise and competence in my use of electronic technologies	3.10	1.272	moderate	13
14	I don't have enough devices for all my brothers to follow up their lessons remotely because of neediness.	3.35	1.295	moderate	9
15	The lack of internet in my family at home because of neediness.	3.90	1.039	high	2
16	Poor possession of basic computer skills	3.84	1.201	high	4
17	Live in a distant village that lacks means of communication	3.88	1.002	high	3
	Grand Total	57.54	10.352	moderate	

In the light of the coronavirus pandemic, the obstacles of technical techniques and distance e-learning infrastructure at the secondary level vary from students' perspective in Tafila's schools, It came to a moderate degree, owing to some technical constraints, as well as some impediments to e-learning infrastructure, as shown in table (4), These constraints include fluctuating Internet speed, poor students' possession of basic computer skills, and The neediness in some families and some of the students' villages lacked means of communication. All of this has led to impediments to remote e-learning.

Second assumption:

Does the level of interaction of students for distance e-learning at the secondary level vary in light of the coronavirus pandemic from the perspective of students in Tafila directorate of education in Jordan?

Table 5. Means and deviations of students' level of interaction for distance e-learning

Num	Field: The constraints of the level of interaction of students for distance e-learning	Mean	standard deviation	level	order
1	The e-learning system fits in with both theoretical and practical parts	3.52	1.280	moderate	9
2	Follow-up activities and duties are available for me through distance e-learning	4.01	.943	high	4
3	Feeling bored when sitting in front of a computer screen for a long time	3.09	1.212	moderate	17
4	Encounter problems and obstacles when studying the material online	3.10	1.288	moderate	16
5	Low motivation to follow up on my classes online remotely because of the lack of direct classroom interaction	2.83	1.418	moderate	20
6	The inability of distance e-learning to enhance and stimulate my practical skills	3.65	1.223	moderate	7
7	Sitting for a long time in front of smart devices or laptops strains my eyes and joints	3.52	1.165	moderate	9
8	I am unable to learn the etiquette of discussion and ways to ask questions through distance e-learning	4.09	1.041	high	3
9	Beginning of introversion and isolation	3.60	1.178	moderate	8
10	Incompatibility of educational material, where the material is presented in a fragmented manner, resulting in dispersion	3.01	1.418	moderate	18
11	I feel disturbed by the difficulty of entering the platform because of the small size of the house	2.92	1.421	moderate	19
12	Students' poor awareness of the importance of distance e-learning	3.30	1.251	moderate	12
13	Lack of direct teacher support and motivation	3.70	1.080	high	6
14	lack of interaction and social relations through e-learning	3.41	1.261	moderate	11
15	Low linguistic capabilities needed to deal with my e-learning	3.49	1.112	moderate	13
16	There is a smooth transition from traditional education to distance e-learning in the light of the coronavirus pandemic	3.40	1.173	moderate	14
17	I am satisfied with the use of the e-learning system as an alternative to the direct learning system in the light of the coronavirus pandemic	3.14	1.182	moderate	15
18	Not accepting the idea of distance e-learning	3.97	1.067	high	5
19	My preoccupation with sites that are not related to distance e-learning.	4.19	.859	high	2
20	Slow browsing of the Internet causes me discomfort.	4.28	.886	high	1
	Grand Total	70.18	10.845	moderate	

the level of interaction of students for distance e-learning at the secondary level varies in light of the coronavirus pandemic from the perspective of students in the schools of Tafila directorate of education in Jordan, which came to a moderate degree, this indicates that there are obstacles to distance e-learning, as shown in Table 5. This is because the level of interaction of students for distance e-learning and that in-room learning is more effective and increases the student's motivation and participation with fellow students because it refines the student's mentality and develops his personality and life skills.

Third assumption:

Are there differences between the averages of technical technology impediments and distance e-learning infrastructure and students' level of interaction for distance e-learning at the secondary level in the light of the coronavirus pandemic from the perspective of students in Tafila directorate of education in Jordan?

To answer the third assumption: a one-way analysis of variance was calculated to indicate the differences between the averages of obstacles of technical technologies and the infrastructure of e-distance learning and the level of interaction of students for distance e-learning at the secondary level in the light of the coronavirus pandemic from the perspective of students in Tafila directorate education in Jordan as shown in Table (6)

Table 6. Analysis of the mono-variance of the difference between sample individuals' estimates

field	Variance source	Square's total	Freedom degrees	Square's average	F value	level of significance
obstacles of technical technologies and the infrastructure of distance e-learning	Between groups	20389.297	71	287.173	39.339	.000
	inside groups	934.383	128	7.300		
	Grand total	21323.680	199			
the level of interaction of students for distance e-learning	Between groups	22470.492	71	316.486	43.355	.000
	inside groups	934.383	128	7.300		
	Grand total	23404.875	199			

The results in table (6) indicate that there are no statistically significant differences at a significant level (α ≤ 0.05) between the study sample individuals' estimates of the constraints to technical techniques and distance le-learning infrastructure, and the level of interaction of students for distance e-learning. The results indicated that there are no statistically significant differences at a significant level (α ≤ 0.05) between the estimates of the study sample individuals between the two areas and the value of F (39.339) for Technical Technology and distance e-learning Infrastructure Constraints and (43.355) for Level of students' interaction for distance e-learning. This study was in line with the study of Yassin and Melhem, (2011), and (Al-Hersh et al., 2010).

The Fourth assumption: Are there differences between the averages of remote e-learning constraints at the secondary level depending on class and gender variables in the light of the coronavirus pandemic from the students' perspective in Tafila directorate of education in Jordan?

Table 7. Analysis of the mono-variance of the difference between sample individuals' estimates according to gender and class variables

gender	class	field	Variance source	Square's total	Freedom degree	Square's average	F value	Level of significant
males	Junior High	obstacles to technical techniques and distance le-learning infrastructure	Between groups	4341.667	32	135.677	113.435	.000
			Inside groups	20.333	17	1.196		
			Grand total	4362.000	49			
		the level of interaction of students for distance e-learning	Between group	4742.647	32	148.208	123.911	.000
			Inside groups	20.333	17	1.196		
			Grand total	4762.980	49			
	Senior High	obstacles to technical techniques and distance le-learning infrastructure	Between group	4918.620	36	136.628	14.209	.000
			Inside groups	125.000	13	9.615		
			Grand total	5043.620	49			
		the level of interaction of students for distance e-learning	Between group	5727.180	36	159.088	16.545	.000
			Inside groups	125.000	13	9.615		
			Grand total	5852.180	49			
females	Junior High	obstacles to technical techniques and distance le-learning infrastructure	Between group	5502.000	32	171.938	146.147	.000
			Inside groups	20.000	17	1.176		
			Grand total	5522.000	49			
		the level of interaction of students for distance e-learning	Between group	6134.820	32	191.713	162.956	.000
			Inside groups	20.000	17	1.176		
			Grand total	6154.820	49			
	Senior High	obstacles to technical techniques and distance le-learning infrastructure	Between group	4285.013	34	126.030	11.309	.000
			Inside groups	167.167	15	11.144		
			Grand total	4452.180	49			
		the level of interaction of students for distance e-learning	Between group	4420.513	34	130.015	11.666	.000
			Inside groups	167.167	15	11.144		
			Grand total	4587.680	49			

The results in table 7 indicate that there are no statistically significant differences at an indicative level ($\alpha \leq 0.05$) Among the estimates of the study sample individuals to the obstacles of distance e-learning in the secondary level according to class and gender variables in the light of the coronavirus pandemic, from the point of view of students in Tafila directorate of education in Jordan, the calculated F value for males in the junior high reached (113.435) and (123.911) for both areas (impediments to technical technologies, distance e-learning infrastructure and students' level of interaction for distance e-learning) While it was for females in junior high (146.147) and (162.956) for both areas. the calculated F value for males in the senior high reached (14.209) and (16.545), and the calculated F value for females was (11.309), and 11.666) for both areas. The study agreed with the study (Al-Mezine, 2015), (Anderson, 2008), and (Hussain et al., (2006).

7. Conclusion

Distance E-learning has become necessary for education institutions, imposed by the nature of covid 19 pandemic, this current research has shed the light on the obstacles that face students in the Directorate of Education / Tafila region in Jordan from their point of view.   The findings show that the obstacles of technical techniques and distance e-learning infrastructure at the secondary level came to a moderate degree, owing to some technical constraints, as well as some impediments to e-learning infrastructure, and the level of interaction of students for distance e-learning at the secondary level varies in light of the coronavirus pandemic, which also came to a moderate degree, the research also finds that there are no statistically significant differences at an indicative level ($\alpha \leq 0.05$)   Among the estimates of the study sample individuals to the obstacles of distance e-learning in the secondary level according to class and gender variables in the light of the coronavirus pandemic. From this research, some suggestions for improving distance E-learning for the study area are proposed as follows:

- Workshops for teachers on ways to deal with e-learning.

- Improving the work of Darsak platform in collaboration with teachers from within the field.

- Studies on business continuity in distance learning and E-education.

- Each school has a special platform for the school, including the teachers, to communicate with the students and increase interaction between school students and their teachers.

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