



## A Case Study: How an E-Learning Education during Covid -19 Has Impacted Jordanian School Students

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researcher-designed questionnaire deemed most applicable to the descriptive-analytical method employed for this study. The study found a vast difference between the students who engage in E-Learning but found it to be a disadvantage and those students whose experience of it has been positive though they have various constraints. The purpose of this study is not merely to acquire data, but for it to be used as a research guide for local governments to improve the delivery and effectiveness of E-Learning as a teaching method even after Covid. It is the hope that all stakeholders, including students, will become accepting and motivated to engage in E-Learning education.

### Abstract

Given the many disruptions to education during Covid-19, this study seeks to determine what impact the resulting E-Learning education has had on students in Jordanian schools. The specific aim is to speak to some secondary school students with the hope of understanding how being engaged in an E-Learning education has impacted them: both positively and negatively. Thus, from the previous academic year, (2019-2020) a total sample of 100 students, inclusive of 50 males and 50 females from AL-Hussainiya Secondary School for Boys and AL-Karak respectively were selected for this study. The instrument of choice adopted for this study was a

economic constraints, duly equipped its education sector with such.

The system of schooling in Jordan is so designed that there are three types of primary and secondary schools: public, private, and UNRWA. Within these structures are two groups. The basic compulsory stage caters to both male and female students in grades 1 through to 10 usually ranging in ages from 6-15 years. The secondary stage caters to students in grades 11 and 12 usually ranging in ages from 16-17 years. The student population for the school year 1999-2000 totaled almost 1.4 million across 4675 schools; for every 5 students in the basic stage, there was a corresponding 1 in the secondary. Most of these educational institutions are government-run. A comparatively small number (4.5%) is run by UNRWA which provides the schooling for basic stage students within the Palestinian camps. The remaining 35.5% of institutions are privately run<sup>1</sup>.

The ongoing technological revolution has opened up communication channels across the world and has necessitated the 'e'

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teacher educators. *Computer Education*, 20(2), 147-156.

## **\* Introduction**

Jordan is unlike many other countries. First, a 2007 National Report highlights its youthfulness with a significant 37.3% of its population being under 15 years. Second, the ratio of males to females in 2005 was approximately 107 males to every 100 females. The country is currently struggling under the burden of supporting an incredible two million refugees from the bordering Asian nations of Iraq and Syria who are fleeing their war-torn countries. As a lower-middle-income nation, Jordan compares well with its non-petroleum producing counterparts, despite its limited natural resources and low Gross National Product. In fact, Jordan enjoys a high rating in the yearly calculated Human Development Index for its performance in both social and economic dimensions. It is amidst these prevailing constraints that a Covid-19 outbreak occurred leaving E-Learning as the only viable option for the delivery of education to Jordanian students. Given the need for specific technologies to facilitate E-Learning, the Jordanian government, despite the

<sup>1</sup> Handler, M.G. (1993). Preparing new teachers to use E-learning : Perceptions and suggestions for

and failings of the traditional learning environment.

There has been an evolution in how education is delivered to learners. No longer is the information passed through paper-based methods; existing now is the computer-based method where the student, with the aid of optical drives, learns by watching and/or reading from the screen. Also in existence is the current methodology where the Internet becomes the host of hundreds of courses accessed by millions with Internet access the world over. Of these three options, the current economic climate the world over has necessitated the adoption of method 3 by educational institutions, and thus this method has become the preferred and predominant method of

evolution' of every sector or activity in society. Everything is now being done electronically. Education has been backed into a wall by Covid-19, it too is now being forced into the 'e' volution with the rapid rise and use of E-Learning. There are many definitions out there for E-Learning. One commonly used one is the use of Information and technological facilities as a facilitator of the orderly transference of knowledge<sup>2</sup>. But there are other equally important functions of E-Learning. It is a platform for enabling the delivery and reception of individually-customized instruction and knowledge<sup>3</sup>. It affords the student the opportunity for self-government: to engage in formal education when and how and at whatever pace they desire. It is the view of<sup>4</sup> that E-Learning is third on the list of all learning systems ever invented by the human race and is the solution to the many inadequacies

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<sup>3</sup> Abdul Aziz, & Hamdy Ahmed. (2008). E-learning philosophy - principles - tools and applications, Amman, Dar Al-Fiker.

<sup>4</sup> Almusa, Abdullah Bin Abdul Aziz. (2002). Electronic Learning : concepts, characteristics, Uses, and Barriers A paper presented in the Future School Forum, King Saud Univ., Reyath.

<sup>2</sup> Adhailch, M. (2010) 'E learning in Jordan, challenges facing e-learning in the new millennium', in Demiray, U. et al. (Eds.): Cases on Challenges Facing e-Learning and National Development: Institutional Studies and Practices, pp.317-334, Anadolu University, Turkey.

environments. As such, with the clear trend towards a technologically driven and guided world, learning institutions must become e-learning abled and be ready to produce, in line with their workspace needs, technologically sound, competent, and savvy workers.

It is the studied aim of the researcher to probe the experiences of students in the Jordanian schools -- AL-Hussainiya Secondary School at AL-Karak -- to gain an understanding, from the students, of their experience in using the E-learning facilities offered at both institutions during the school year 2019-2020.

### **\* Purposes of the Study**

1- There are two purposes for conducting this study:

To discover from students how much access they have to use E-learning facilities at AL-Hussainiya secondary school.

2- To understand from students what they view as the advantages and

delivering education<sup>5</sup>. The blended approach -- which combines both E-Learning and the outdated face-to-face method -- is the preferred method. This is the preferred option when an exclusively E-Learning approach via the World Wide Web is not available for various reasons<sup>6</sup>.

With E-Learning comes the use of many and varied ICT technologies to include, but not limited to, computers/laptops/tablets/ software, multimedia material, etc. Today, E-Learning has been afforded many alternate names -- all having the same meaning and being tied to a type of learning -- Online, Virtual, Network, Distributed, Web-Based. E-Learning not only utilizes online platforms but it allows for the use of text and interactive and simulated materials in the learning space.

### **\* Statement of the Problem**

It is both the prerogative and responsibility of learning institutions to prepare their wards to function effectively in their respective working

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<sup>6</sup> Khasawneh, A. (2010) 'Using internet technology to support flexible learning in Jordan: a case of Hashemite University', *Int. J. Innovation and Learning*, Vol. 8, No. 1, pp.1-10.

<sup>5</sup> Al-adwan, A. and Smedley, J. (2012) 'Implementing e-learning in the Jordanian higher education system: factors affecting impact', *International Journal of Education and Development using Information and Communication Technology*.

residents within or residing in often overlooked refugee villages. Despite the small survey sample, resulting in it being tagged a non-representative sample, the sample taken between March and June of 2020, highlights trends coming out of the Covid-19 schooling initiative<sup>7</sup>.

A study that highlighted the importance of e-learning in educator-training was conducted in Jeddah, Saudi Arabia. Its stated aim was to review the pervasiveness of the use of e-learning facilities by supervisory personnel in the training of 191 educators. The discovery was that the unreserved desire of such trainers to utilize E-learning facilities stemmed from their familiarity with the technology through training courses<sup>8</sup>.

The effectiveness of E-learning is further highlighted in a study which compared the motivation of students in today's e-classroom with the traditional one It was conducted<sup>9</sup> and found that intrinsic motivation was

drawbacks of E-Learning at AL-Hussainiya secondary school.

### \* Literature Review

On the 5th of May 2020, the CLS had the initiation of its online survey in both the English and Arabian languages. The survey aimed to investigate the support for, availability, and quality of online education to residents -- learners, educators, and parents -- in Jordan, Lebanon, and the occupied areas of the West Bank and the Gaza Strip. Specifically, the offerings of such online education by the Education Ministry, the private entities, the United Nations, and (I)Non-Governmental Organizations were studied.

The desire to give a true voice to the real experiences of teachers, students and parents necessitated this study. The studied and often repeated narrative of institutional successes might be misleading, hence the need to speak to members working with

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Usage in Training Teachers in Jaddah City, College of Education, Um Qura Univ.,College of Education.

<sup>9</sup> Rovai Alfred, Ponton Michael, Wighting Mervyn, Baker Jason, (2007), A Comparative Analysis of Student Motivation in Traditional Classroom and E-Learning Courses, Vol 6, Issue 3,Page(s) 413-432.

<sup>7</sup> Mai Abu Moghli & Maha Shuayb. (2020). EDUCATION UNDER COVID -19 LOCKDOWN: REFLECTIONS FROM TEACHERS, STUDENTS & PARENTS.

<sup>8</sup> Al Nafeesah, & Kahalid Abdul Rahman Bin Ibraheem. (2007). The Status of Electronic Learning

given the restriction on people's time, the possibility for individual study, and greater comfort levels, e-learning provided a better environment for workers to be trained in comparison to the group in-office training<sup>11</sup>.

In their study,<sup>12</sup> discovered that Australian students have different motivations for their preference of on-line or traditional learning. The possibility for communicating shared understanding was a reason for choosing the traditional method. Contrastingly, the provision of structured lessons necessitated e-learning as the choice.

Motivation is one of the main ingredients which can accrue through learning how to program. Programming demands much effort and training, and only the motivated student will dedicate the requisite time. Hence, the belief that a well-developed

more evident in the e-student. Comparatively, the three extrinsic measures were found to yield similar results in both the modern e-class and the traditional whiteboard classroom. Additionally, the comparison between grads and undergrads highlighted greater intrinsic motivation in grad students for both e-class and traditional classes.

Study evaluated how learners viewed the e-learning platform. The study was conducted on the premise that there was a quadruple view that guided how a learner sees the e-learning environment. The four views consisted of them viewing it as an environment that gave full self-government to the learner, problem-solving space, interactive media training environment, and as a space where the facilitator becomes a tutor<sup>10</sup>.

Studied the possibility of having specialized niche workers trained through e-learning thus foregoing the need to employ expert trainers for an extracted period. They discovered that

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use of an programming courses, *Computers & Education*, Vol 55, Issue 1, Pages 218–228.4.

<sup>12</sup> Paechter Manuela, Maier Brigitte, (2010), Online or face-to-face? Students' experiences and preferences.

<sup>10</sup> Liaw Shu-Sheng, Huang Hsiu-Mei, Chen Gwo-Dong, (2007), An activity-theoretical approach.

<sup>11</sup> Payne A.M., Stephenson J.E., Morris W.B., Tempest H.G, Mileham A, Griffin D., (2009), The

quality, there was an inadequate number of teachers who agreed to be trained in technology, and poor or non-existent technology infrastructure<sup>15</sup>.

#### **\* Factors affect of E-Learning**

The desire to simulate the traditional educational learning environment in an online platform, via E-Learning is underpinned in the understanding of five guiding factors:-

##### ***1. Society and Culture***

In every territory, there is a culturally-shaped view of electronic learning and educational policies that are unique and specific to its circumstances. Society and culture play a major role in shaping the attitudes of different states respecting the credibility of online certification given its link to the online dissemination of teaching content<sup>16</sup>.

and adopted e-learning platform will offer such motivations<sup>13</sup>.

Study of the incorporation of e-learning systems in the training of educators at Um Qura, Mecca highlighted much e-learning ignorance. It was discovered that just over a quarter of Math students were unfamiliar with the basic hardware or software necessary to drive e-learning. A lack of training and the absence of such equipment at the training facility were the reasons for the unfortunate situation<sup>14</sup>.

258 teachers and teachers in training from Baskin University in Turkey was the sample used in a study. The results outlined the hindrances to technology usage: lessons in technology were few and of poor

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<sup>15</sup> Gulbahar, Yasemin. (2008). ICT using in higher education: A case study on pre- service teachers and instructors, Turkish online journal of educational technology, 7, 1, Article 3, <http://tojde.anadolu.edu.tr>.

<sup>16</sup> Al-Araibi, A. A. M., Naz'ri Bin Mahrin, M., & Yusoff, R. C. M. (2019). Technological aspect factors of Elearning readiness in higher education

<sup>13</sup> Lawa Kris M.Y, Lee Victor C.S, Yu Y.T, (2010), Learning motivation in e-learning facilitated computer.

<sup>14</sup> Al-Barakati, & Neven Bint Hamza Sharaf. (2009). status of using electronic learning by math students in the Educational Preparation Program at Umm Qura University in Holy Mecca, The Scientific Educational Journal, 2(12), Cairo.

classroom counterpart, has the responsibility for instructing a global audience via an ever-changing, highly engaging online environment.

There is an urgent need for the proper training of teachers to fully utilize and control the online learning environment with the aid of modern technology tools and programs that are widely available, applicable, and practicable<sup>19</sup> for teaching, management, and communication purposes. For this to happen, the e-teacher must experience a mind alteration; it must be accepted that a change has taken place, a change in education that is irreversible. The recognition must also be made by education stakeholders that a major cause of such resistance is fear, fear of change, and fear of the unknown, and develop tactics to counteract such.

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to use of mobile learning applications: A comparison between universities adopters and non-adopters. *Education and Information Technologies*, 24(2), 1433–1468.

<sup>19</sup> Tham, C. and Werner, J. (2005) 'Designing and evaluating e-learning in higher education: a review investigate learners' factors toward e-learning systems, *Computers in Human Behavior*, Vol 23, Issue4, Pages 1906-1920.

The relative ignorance of many states concerning E-Learning as an educational tool coupled with unregulated construct or governance of its implementation by higher learning institutions have led to its ineffective implementation resulting in loss of revenue for educational institutions<sup>17</sup>.

## **2. Instructor**

The inefficiencies, relative neophyte status of the e-moderator is another major hindrance to the successful worldwide implementation of E-Learning. Though the duties and responsibilities of such a one, is comparable to the traditional in-class teacher, the execution of said duties is sometimes severely faulty<sup>18</sup>. This state of affairs has far-reaching consequences when one considers that the e-moderator, unlike the physical

institutions: Delphi technique. *Education and Information Technologies*, 24(1), 567–590.

<sup>17</sup> Al-Khasawneh, A. M. and Obeidallah, R. (2019). E-learning in the Hashemite University: Success factors for mobile learning system based on students' perspectives. *Engineering Science and Technology, an International Journal*, 19(3), 1314–1320.

<sup>18</sup> Almaiah, M. A., & Al Mulhem, A. (2019). Analysis of the essential factors affecting of intention



are critical to the achievement of an efficiently created, engaging, beneficial e-course<sup>23</sup>. Each professional has a role to undertake: as it is the prerogative of the teacher to decide on learning targets, create the content and acquire pedagogical material, it is the job of the course designer to take that raw material, fuse it into a multimedia environment and bring it to life as a fun and engaging online lesson<sup>24</sup>. The creation of a fun and engaging learning environment for the student necessitates the fusion of both these principal elements. Unfortunately, such cooperation and unity is currently a mere pipe dream<sup>25</sup> with regulations governing much-treasured trademarks still in the never-ending discussion-phase in many constituencies.

### **5. Infrastructure**

It is pointless for an institution to develop the perfect e-course if the

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<sup>24</sup> Almaiah, M. A., & Al Mulhem, A. (2019). Previous reference.

<sup>25</sup> Chin, S., & Hortin, A. (1994). Teachers' perceptions of instructional technology and staff development. *Journal of Educational Technology Systems*, 22(2), 83-98.

### **3. Students**

As far as the success of E-Learning goes, the learners are by far the most important role player<sup>20</sup>. Coming from different societies with different experiences, expectations, norms, skill sets, and tongues, the idea of becoming a part of this mixed multitude attached via invisible channels forming the Internet is not an easy sell. Thus the process necessitates structured and targeted student training prior to E-Learning enrollment. Such engagement would alleviate the fears of unpreparedness, newness, unfamiliarity with the new e-teaching and learning environment<sup>21</sup>. Concerning specific courses, an understanding of all its pre-registration requirements should be fully communicated to the learner<sup>22</sup>.

### **4. Courses**

The cooperation and input of both the e-teacher and course designer

<sup>20</sup> Tham, C. and Werner, J. (2005). Previous reference.

<sup>21</sup> Abdul Aziz, & Hamdy Ahmed. (2008). Previous reference.

<sup>22</sup> Almaiah, M. A., & Jalil, M. A. (2014). Investigating students' perceptions on mobile learning services.

<sup>23</sup> Tham, C. and Werner, J. (2005). Previous reference.

The study utilized a specially-created 18-item questionnaire. The purpose was to investigate students' level of access to E-learning facilities and to discover the benefits and drawbacks of E-learning from the perspectives of the students. The five-point Likert scale was used as the rating instrument. Ratings ranged from 1 - 5 with 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). The coefficient of Kronbach alpha was used in the determination of the instrument reliability which read (80.1).

## \* Results and Discussion

### Question 1: What are the levels of e-learning usage by students at AL-Hussainiya Secondary Schools?

**Table 1**  
**Means and Standard Deviation levels for E-Learning usage**

<sup>27</sup> Andersson, A. (2008) 'Seven major challenges for e-learning in developing countries: case study eBIT, Sri Lanka', International Journal of Education and Development Using Information and Communication Technology.

underpinning technological framework and structures needed for its utilization or operation are unavailable or incompatible. Equally senseless is the idea of participating in an e-course over a non-existent Internet source<sup>26</sup>. Equipping, operating, and maintaining a functional E-Learning environment that offers needed support to both educator and learner require much financing and material input<sup>27</sup>.

### \* Methodology of the Study

A researcher-designed questionnaire was the instrument used to gather data in the survey. The data was then analyzed using the descriptive-analytical method.

### \* The Population and Sample

100 male and female students from AL-Hussainiya Secondary Schools for boys and girls in Jordan comprised the sample for this survey. They were randomly chosen from a total of 764 students during the 2019-2020 academic year.

### \* Instrumentation

<sup>26</sup> Almaiah, M. A., & Man, M. (2016). Empirical investigation to explore factors that achieve high quality of and recommendations', Journal of Leadership and Organizational Studies, Vol. 11, No. 2, pp.15-25.

for topics subjects		
the status of e-learning usage	2.94	1.55

Table (1) outlines moderate levels of e-learning consumption with a mean of 2.94 and a standard deviation of 1.55. The item I communicate with my friends using email received the highest mean of 3.98 while the item I use email to communicate with my teachers had the lowest mean of 2.09.

### **Question 2: What are the benefits and drawbacks of E-Learning for students at AL-Hussainiya Secondary Schools?**

**Table 2 Means and Standard Deviation for the benefits of E-Learning usage**

<b>Items</b>	<b>Mean</b>	<b>Standard Deviation</b>
Increases the motivation of students to study	2.55	1.22
Develop IT skills	3.11	1.32
Gives immediate and direct feedback	2.01	0.76
Take into account individual	2.45	1.14

<b>Items</b>	<b>Mean</b>	<b>Standard Deviation</b>
Word basic skills design tables, reports and questionnaires	2.28	.98
I am able to deal with the Microsoft office program	3.11	0.70
I communicate with my friends using email	3.98	0.98
I am able o deal with smart phones and computers	3.82	1.01
my teachers ask to send my home works to their e-mail	2.15	1.02
I have a private e-mail	2.45	0.65
I use e-mail to communicate with my teachers	2.09	0.60
The research in electronic libraries useful	2.67	0.89

Disabled devices hinders the educational process	3.04	0.66
Prolonged time sitting in front of a computer causes a lot of diseases	3.01	.98
increases the burden between teachers and students	3.06	0.86
E-learning focuses on the senses of hearing and sight without the rest of the senses	2.12	1.22
disadvantages of e-learning usage	2.64	1.15

Table 3 shows a moderate mean of 2.64 and standard deviation was 1.15 for the disadvantage of e-learning usage. The item increases the burden between teachers and students received the highest mean of 3.06, and

differences among students		
Help students to retain information for a long period	3.44	1.08
advantages of e-learning usage	2.87	0.56

Table (2) shows a moderate mean of 2.87 and a standard deviation of 0.56 for the advantages of e-learning usage. The item Helps students to retain information for longer periods received the highest mean of 3.44, and the item Gives immediate and direct feedback received the lowest mean of 2.01.

**Table 3: Means and Standard Deviation for the drawbacks of e-learning usage**

Items	Mean	Standard Deviation
Increases the isolation of students	2.68	0.67

seemed to be very proficient in handling the computer and in performing basic operations on documents. The students agreed that the benefits of e-learning are in them learning more about computer technology and their ability to learn autonomously. The highlighted drawback was the hours they had to spend sitting before the computer screen which be dangerous to their health. The study revealed a notable statistical variance among the averages of students on the axis which looked at the levels of e-learning consumption and the drawbacks of e-learning. A less notable statistical difference was observed among the averages of students on the axis which looked at the benefits and constraints of e-learning.

#### **\* References**

- Abdul Aziz, & Hamdy Ahmed. (2008). E-learning philosophy - principles - tools and applications, Amman, Dar Al-Fiker.
- Adhaileh, M. (2010) 'E learning in Jordan, challenges facing e-learning in the new millennium', in Demiray, U.

the item E-Learning only focuses on sight and hearing and not on the other senses received the lowest mean of 2.12.

#### **\* Limitations and Recommendations**

Given that this study was restricted to selected students at the AL-Hussainiya Secondary School in Jordan, there should be some caution in ensuring the findings are generalized to the target population.

These are the several recommendations proposed at the end of this study. Properly functioning Internet must be made available in all colleges. All Jordanian schools must get adequate e-learning teaching time on the curriculums developed by their education ministry. University students must receive the appropriate amount of training in ICT technology usage. Create publications of a technical nature to sensitize the public and stakeholders about the many benefits of E-learning.

#### **\* Conclusion**

Students communicated that there was inadequate use of email technology for communication with teachers, and for sending out duty rosters. They also highlighted the limited number of broadcast lectures to them in off-site locations. They

- students in the Educational Preparation Program at Umm Qura University in Holy Mecca, *The Scientific Educational Journal*, 2(12), Cairo.
- Al-Khasawneh, A. M. and Obeidallah, R. (2019). E-learning in the Hashemite University: Success factors for mobile learning system based on students' perspectives. *Engineering Science and Technology, an International Journal*, 19(3), 1314–1320.
- Almaiah, M. A., & Al Mulhem, A. (2019). Analysis of the essential factors affecting of intention to use of mobile learning applications: A comparison between universities adopters and non-adopters. *Education and Information Technologies*, 24(2), 1433–1468.
- Almaiah, M. A., & Alyoussef, I. Y. (2019). Analysis of the effect of course design, course content support, course assessment and instructor characteristics on the actual use of E-learning system. *IEEE Access*, 7, 171907–171922.
- et al. (Eds.): *Cases on Challenges Facing e-Learning and National Development: Institutional Studies and Practices*, pp.317–334, Anadolu University, Turkey.
- Al Nafeesah, & Kahalid Abdul Rahman Bin Ibraheem. (2007). *The Status of Electronic Learning Usage in Training Teachers in Jaddah City, College of Education, Um Qura Univ., College of Education*.
- Al-adwan, A. and Smedley, J. (2012) 'Implementing e-learning in the Jordanian higher education system: factors affecting impact', *International Journal of Education and Development using Information and Communication Technology*.
- Al-Araibi, A. A. M., Naz'ri Bin Mahrin, M., & Yusoff, R. C. M. (2019). Technological aspect factors of Elearning readiness in higher education institutions: Delphi technique. *Education and Information Technologies*, 24(1), 567–590.
- Al-Barakati, & Neven Bint Hamza Sharaf. (2009). *status of using electronic learning by math*

- e-learning constructivist solution in workplace learning, *International Journal of Industrial Ergonomics*, Vol 39, Issue 3, Page(s) 548-553.
- Gulbahar, Yasemin. (2008). ICT using in higher education: A case study on pre- service teachers and instructors, *Turkish online journal of educational technology*, 7, 1, Article 3, <http://tojde.anadolu.edu.tr>.
- Handler, M.G. (1993). Preparing new teachers to use E-learning : Perceptions and suggestions for teacher educators. *Computer Education*, 20(2), 147-156.
- implementation in Jordan. In *Advanced Online Education and Training Technologies* (pp. 135-145). IGI global
- in e-learning, *The Internet and Higher Education*, Vol 13, Issue 4, Page(s) 292-297 *International Journal of Interactive Mobile Technologies (iJIM)*, 8(4), 31–36.
- Khasawneh, A. (2010) ‘Using internet technology to support flexible learning in Jordan: a case of Hashemite University’, *Int. J. Innovation and Learning*, Vol. 8, No. 1, pp.1–10.
- Almaiah, M. A., & Jalil, M. A. (2014). Investigating students' perceptions on mobile learning services.
- Almaiah, M. A., & Man, M. (2016). Empirical investigation to explore factors that achieve high quality of and recommendations’, *Journal of Leadership and Organizational Studies*, Vol. 11, No. 2, pp.15–25.
- Almusa, Abdullah Bin Abdul Aziz. (2002). *Electronic Learning : concepts, characteristics, Uses, and Barriers* A paper presented in the Future School Forum, King Saud Univ., Reyath.
- Andersson, A. (2008) ‘Seven major challenges for e-learning in developing countries: case study eBIT, Sri Lanka’, *International Journal of Education and Development Using Information and Communication Technology*.
- Chin, S., & Hortin, A. (1994). Teachers’ perceptions of instructional technology and staff development. *Journal of Educational Technology Systems*, 22(2), 83-98.

- Tham, C. and Werner, J. (2005) 'Designing and evaluating e-learning in higher education: a review investigate learners' factors toward e-learning systems, *Computers in Human Behavior*, Vol 23, Issue4, Pages 1906-1920.
- Lawa Kris M.Y, Lee Victor C.S, Yu Y.T, (2010), Learning motivation in e-learning facilitated computer
- Liaw Shu-Sheng, Huang Hsiu-Mei, Chen Gwo-Dong, (2007), An activity-theoretical approach to
- Mai Abu Moghli & Maha Shuayb. (2020). EDUCATION UNDER COVID -19 LOCKDOWN: REFLECTIONS FROM TEACHERS, STUDENTS & PARENTS.
- Paechter Manuela, Maier Brigitte, (2010), Online or face-to-face? Students' experiences and preferences
- Payne A.M., Stephenson J.E., Morris W.B., Tempest H.G, Mileham A, Griffin D., (2009), The use of an programming courses, *Computers & Education*, Vol 55, Issue 1, Pages 218–228.
- Rovai Alfred, Ponton Michael, Wighting Mervyn, Baker Jason, (2007), A Comparative Analysis of Student Motivation in Traditional Classroom and E-Learning Courses, Vol 6, Issue 3, Page(s) 413-432.