

Factors Affecting of Electronic Learning Platform Using as Perceived by Nursing Educators and Students and its Relation to Nursing Students' Satisfaction

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Abstract

Background: E-learning platforms has received a great deal of attention from the educators and researchers. The use of E-learning in the field of education has become popular during COVID-19 outbreak. However, there are many challenges faced by educators and students which affect their intention to use and satisfaction.

Aim: Assess factors affecting of electronic learning platform using as perceived by nursing educators and students and its relation to nursing students' satisfaction.

Design: A descriptive correlational design was utilized. ***Setting:*** This study was conducted at the Faculty of Nursing, Benha University. ***Subjects:*** Sample of 93 nursing educators (Lecturers, Assistant professors and Professors) and stratified random sample of 1008 of nursing students from four academic years (2021/2022).

Tools: Data of the present study was collected by using two tools namely; I) Factors Affecting of E-learning Platform Using Questionnaire, II) Nursing Students' Satisfaction Questionnaire. ***Results:*** The results showed that highest percent of nursing educators and nursing students had high perception regarding environmental factors and more than one third (37.1%) of nursing students had moderate satisfaction level toward e-learning platform using

Conclusion: There was a highly statistically significant relation between factors affecting electronic learning platform using and nursing students' satisfaction. ***Recommendation:*** Designing training programs to raise awareness and the ability to use e-learning as an effective training tool.

Key words: E- learning platform- Factors affecting- Nursing students- Satisfaction

Introduction:

COVID -19 has changed the complete phase of the education sectors. At this global pandemic time, administrators, teachers, and students had the dilemma of how to achieve the overall objectives of the educational institutions and individuals. In March 2020, the Centers for Disease Control and Prevention issued guidelines on the alternative teaching methods to communicate the class works and assignments to the students. The popular virtual classroom applications are ZOOM, Google Classroom, Moodle, and Blackboard that play a vital role in the transition from face-to-face classes to online and e-learning system (Vadakalur & Sankar, 2020).

The electronic learning is defined as the provision of educational content (electronic) through the media based on the computer and its networks to the recipient in such a way that allows the possibility of active interaction with this content and features and with peers only simultaneous or not synchronized and the possibility of completing this learning in time and place and at the speed that suits conditions and abilities of both learner and educator, as well as the possibility of managing this learning also through these media. **(Gorbunova & Kalimullin, 2017).**

There are two basic types of distance learning are asynchronous and synchronous. Until recently, distance learning initiatives mainly relied on asynchronous means for teaching and learning. However, recent improvements in technology and increasing internet capabilities have led to the growing popularity of synchronous distance learning. Participants involved in distance learning are usually separated by time and place so the utilization of communication tools is necessary to facilitate interaction and learning. Distance learning uses two main forms of media; Synchronous – two-way videoconferencing, and asynchronous learning networks. **(Shandra & Chystiakova, 2021).**

E-learning platform is software that supports the conduct of distance learning. This type of software brings together the tools necessary for the three main users - teacher, student, administrator - of a device, which aims at the remote consultation of educational contents, the individualization of learning, and tele-tutoring. These systems aim to put online comprehensive lessons where the student can prepare his contrives, his license, his baccalaureate via these platforms. **(Ouadoud, et al., 2021).**

E-learning platform offers the utilization of the internet to deliver the information to the students at different time and place. Also E-learning platform provides free access to the network without considering the time and places restrictions through web technologies in order to promote learning. E-learning systems are web based software for distributing, tracking, and managing courses over the Internet they contain features such as chat rooms, whiteboards, discussion forums, polls, quizzes and surveys which allow instructors and students to share course content and communicate online synchronously and asynchronously. **(AbdulRazak, et al., 2021).**

Understanding the factors that affect a new technology to be accepted and implemented is very crucial for the success of the implementation of that technologies. There are many factors that influence e-learning platform using including uses usefulness, ease of use, training, and inadequate infrastructure capacity due to internet signal, software, or other device constraints. Students also experience difficulties due to limited access and networks. The use of e-learning platform also requires user satisfaction for successful implementation, many factors affect students' satisfaction as instructor, courses, technology, design and environment are factors affecting satisfaction **Kustono, (2021).**

Satisfaction is the accumulation of student's perceptions and behaviors derived from the total benefits obtained. Student satisfaction has gained much attention lately

due to a rising competition among universities to attract and retain students. Electronic satisfaction is the level of student's satisfaction with purchasing experience through online sites. Student satisfaction is a critical variable in determining the success or failure of online learners, courses, and programs. Designing and implementing an effective and efficient education environment, which satisfies students, is a complex process, which involves many factors, including instructor support, student interaction and collaboration, and student autonomy **(Giray, 2021)**.

Many factors affect the student satisfaction of e-learning, such as structure; flexibility; experiences and support of the teacher; motivation; and communication. About the instructor, factors such as their attitude towards e-learning and the amount of response to learners. About the educational materials, flexibility and quality of the contents. In the technology domain, technology quality and Internet; in the field of design, usefulness and ease of use; and finally regarding the learning environment, diversity and the extent of learners' interaction with others; were suggested effective on learners' satisfaction **(Yekefallah, et al., 2021)**.

Nursing students' satisfaction toward using e-learning platform is linked with factors affecting its use such as the learning process, quality tutor, perception of usability, perception of convenience, training, facilitating conditions, personalization of e-learning, e-learning content, e-learning self-efficacy, interaction (communication), comfort, structure (clarity and online instruction provided by instructor), learning style, platform, associates, access to technology and management. The six dimensions for implementing e-learning systems in developing countries, including student characteristics, instructor characteristics, institution and service quality, infrastructure and system quality, course quality and information, and extrinsic motivation **(Bismala & Manurung 2021)**.

Significant of the study:

The global outbreak of COVID-19 resulted in the suspension of classes for more than 850 million students worldwide, disrupting the original teaching plans of universities in these countries and regions. Soon later, many countries started to offer online teaching to students by using different e-learning platforms. In response to the outbreak of the epidemic, the online classroom has become a necessary way to maintain normal teaching order. However, many new problems arise in the new form of online education. This requires that new factors affecting electronic learning platform and nursing students' satisfaction be taken into account in the study. **(Chen, et al., 2020)**.

Usability of educational technology such as e-learning platforms plays an important role for bridging the gap between educators and students and technology. It is a crucial characteristic for user acceptance and therefore for the technology to be further diffused. The usability of e-learning platform systems greatly affects the learning effectiveness and the overall learning experience. So there is a need to explore these parameters and take them into account while making educational decisions emerged during the pandemic crisis and the transition from traditional

teaching to e-learning and its effect on students' satisfaction regarding online learning. (Mastan et al., 2022). So that this study was conducted to assess factors affecting of electronic learning platform using as perceived by nursing educators and students and its relation to nursing students' satisfaction.

Aim of the study:

This study aims to Assess factors affecting of electronic learning platform using as perceived by nursing educators and students and its relation to nursing students' satisfaction.

Research Questions

1. What are the factors affecting of E-learning platform using as perceived by nursing educators and nursing students?
2. What are the levels of nursing students' satisfaction toward e-learning platform using?
3. Is there is a relation between factors affecting of E-learning platform using and nursing students' satisfaction?

Subjects & methods:

Design: A descriptive correlational design was used to achieve the aim of the present study.

Setting: The current study was conducted at the Faculty of Nursing Benha University. There are six academic departments in the faculty including: Nursing administration department, psychiatric nursing and mental health department, community health nursing department, pediatric nursing department, obstetrics and gynecological nursing department and medical - surgical nursing department.

Subjects: Constituted of two groups as following; 1. Nursing educators group; All available nursing educators 93 (Lecturers, Assistant professors and Professors) who were working in the above mentioned setting, were eligible to participate in the study. 2. Nursing students group (Consisted of 1008 nursing students from the four academic years (2021/2022) who were selected using stratified random sampling. A sample size was taken from each strata (an academic year).

Tools of data collection: *Two tools were used for data collection*

1. Factors Affecting of E-learning Platform Using Questionnaire

Two structured questionnaires were developed by the investigator based on literature review (Nyagorme et al., 2017; Cacheiro-Gonzalez et al., 2019; Opeyemi et al., 2019; Chen, Yang & Cong, 2020; Victoria et al.,2020) to assess factors affecting of e-learning platform using as perceived by nursing educators and students.

a- Nursing Educators' Questionnaire was consisted of two parts:

Part 1: Personal characteristics of nursing educators: It consisted of 14 questions divided into two sections;

Section1: It consisted of 6 questions about personal characteristics; (academic department, age, gender, marital status, residence, academic degree, years of experience in teaching).

Section2: It consisted of 8 questions about technology experience of the nursing educator as (Attend previous training course about using computer, training courses about the use of e-learning platform).

Part 2: Factors Affecting E-learning Platform Using as Perceived by Nursing Educators: It consisted of 56 items divided into 4 dimensions distributed as follows; Awareness about electronic learning platform (26 items) distributed as follows (training on e- learning platform using (10 items), awareness of usefulness of e- learning platform (9 items) and awareness about the use of e- learning platform (7 items)), access to technology (7 items), platform system quality (10 items) and environmental factors (13 items).

Scoring system:

Subjects' responses were scored on a three point Likert Scale ranged from (1) disagree to (3) agree. The score of the items was summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

The total factors score was ranged from (56-168) and it was considered high if the percent score was $\geq 75\%$ (126-168) while considered moderate if the percent score was ranged from 60 to $< 75\%$ (101-125), and considered low if it is $< 60\%$ (56-100).

b- Nursing Students' Questionnaire was consisted of two parts:

Part 1: Personal characteristics of nursing students: it consisted of 13 questions divided into two sections;

Section1: It consisted of 5 questions about personal characteristics; (Academic year, age, gender, marital status, residence).

Section2: It consisted of 8 questions about technology experience of the nursing student.

Part 2: Factors affecting e-learning platform using as perceived by nursing students: It consisted of 50 items divided into 4 dimensions distributed as follows; Awareness about electronic learning platform (23 items) distributed as follows (training on e- learning platform using (5 items), awareness of usefulness of e- learning platform (11 items) and awareness about the use of e- learning platform (7 items)), access to technology (7 items), platform system quality (10 items) and environmental factors (10 items).

Scoring system:

Subjects' responses were scored on a three point Likert Scale ranged from (1) disagree to (3) agree. The score of the items was summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

The total factors score was ranged from (50-150) and it was considered high if the percent score was $\geq 75\%$ (113-150) while considered moderate if the percent score was ranged from 60 to $< 75\%$ (90-112), and considered low if it is $< 60\%$ (50-89).

Nursing Students Satisfaction Questionnaire

The questionnaire was developed by the investigator based on literature review (Sun et al.,2008; Ali, 2012; Virtanen et al., 2017; Al-sammarraie et al., 2019; Puška et al., 2021) to assess nursing students' satisfaction levels toward e-learning platform using. It was consisted of 43 items divided into 4 dimensions distributed as follows; Electronic learning platform utilization (9 items), teaching staff members (9 items), learning content (13 items) and feedback (12 items).

Scoring system

Subjects' responses were scored on a three point Likert Scale ranged from (1) unsatisfied to (3) satisfied. The score of the items was summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

The total satisfaction score was ranged from (43-129) and it was considered high if the percent score was $\geq 75\%$ (97-129), moderate if the percent score was ranged from 60 to $< 75\%$ (78-96), while it considered low if the percent score $< 60\%$ (43-77) (Ali, 2012).

Preparatory phase: This phase started from April 2021 to May 2021. It included the following:

- Reviewing the national and international related literature using journals, periodicals, textbooks, internet and theoretical knowledge of the various aspects concerning the topic of the study for developing the tools and translating the tools into Arabic language and back translation to check its accuracy.
- **-Tools validity:** Face and content validity of study tools were done by group of jury consisted of 7 experts four of them from different Faculty of Nursing (one professor from Tanta University, one professor from Menofia University, one assistant professor from Cairo University and one assistant professors from Benha University in nursing administration. In addition to the director of the e-Learning Center and the dean of Faculty of Veterinary Medicine from Benha University, the manager of e-learning platform and information technology unit at Faculty of Nursing Benha University and The director of the Benha University's e-learning platform).The modifications were done based on jury opinions such as (adding some items as (what is the program used to provide lecture on E-learning platform and availability of chat rooms and forums that improve the educational process), omitted the item that gives the same meaning and modifying some words to give the right meaning for the item which did not understood clearly.

Pilot study: A pilot study was carried out in the mid of October 2021 to ascertain the clarity and applicability of the study tools. 100 nursing students from four academic years and 11 nursing educator were included in the pilot study representing 10 % of total study subjects. No modification was needed. The pilot study included in the study main subjects.

Field work: Data collection took about two weeks in November 2021. The investigator prepared the questionnaire electronically via google form design and took the permission from heads of academic departments who explained the aim and the nature of the study and the method of filling the electronic questionnaires to the educators and students in their departments and then the links were sent to nursing educators and students through the WhatsApp groups via heads of different academic departments. Educators' questionnaire link (<https://forms.gle/vT7YNmPEhZJNc9sd7>), students' questionnaire link: (<https://forms.gle/iRc6WqXuomsqVFHV7>). Educators and students started to open the links and fill the questionnaires. Data was collected daily and the average number of responses per day was ranged between 67-70 response from students and 5-10 response from educators.

Administrative design: An official permission was issued from the vice dean for learning and students affairs to heads of academic departments of the Faculty of Nursing to conduct the study, and seek their support.

Ethical Considerations: Prior to the conduction of the study, ethical approval was obtained from the scientific research committee at Faculty of Nursing Benha University. All subjects were informed that participation in the study was voluntary and informal consent was obtained from the participants in the study through their acceptance for filling questionnaires. Confidentiality of data obtained was protected by the allocation of a code number to the questionnaire sheets. Subjects were informed that the content of the study tools will be used for the research purpose only. Participants' right to withdraw from the study at any time was ascertained.

Statistical design: Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 21.0) was used. Descriptive statistics were applied in the form of mean and standard deviation for quantitative variables and frequency and percentages for qualitative variables. Independent t-test was used to test the significance of some variables. Pearson correlation coefficient was used as a measure of the strength of a linear association between two quantitative variables. Statistical significance was considered at p-value $p < 0.05$, considered highly statistically significance at p-value $p < 0.001$ and considered not significance at $P > 0.05$.

Results

Table (1); Shows that nearly one third (32.3%) of nursing educators their age ranged between 35 to <40 years old with $\bar{X} \pm SD$ (37.94±7.64) years. In relation to their marital status, the majority (82.8%) of them were married. Regarding their residence, less than two thirds (62.4%) of them living in rural areas. In relation to their academic degree, less than half (45.2%) of them were lecturers. Regarding to their years of experience, less than one third (30.1%) of them had less than 10 years of experience with $\bar{X} \pm SD$ (13.50±6.81) years.

Figure (1); Illustrates that less than one fifth (19.4%) of nursing educators were worked in obstetrics and gynecology department. While the minority of them (12.9%) were working of psychiatric nursing and mental health department.

Table (2); Shows that more than one quarter (28.7%) of nursing students were in the second academic year and more than half (52.6%) of them were aged equal and more than 20 years old with Mean $\pm SD$ (19.69±1.44) years. As far as their gender, more than half (60.1%) of them were females. In relation to their marital status, the majority (94.0%) of them were unmarried. Regarding to their residence, more than three quarters (78.0%) of them living in rural areas.

Table (3): Reveals that the majority (98.9%, 96.8% & 96.8%) of nursing educators have a computer or laptop and attend previous training course about using computer and use Microsoft office program on their computer or laptop,

respectively. Also (27.8%) of them use word program. Regarding phone type, the majority (97.8%) of them had an advanced mobile phone. The high percent (84.9%) of them had competent internet experience. Regarding training courses about e-learning platform, the majority (92.5%) of them received training courses about the use of e-learning platform. Regarding to the program used to provide lecture on e-learning platform, (94.6%) of them use Microsoft teams.

Table (4): Reveals that more than half (52.1%) of nursing students had a computer or laptop. The majority (88.2%) of them doesn't attended previous training course about using computer. More than one third (39.5%) of them use word program. Regarding mobile phone, less than three quarters (71.2%) of them had advanced mobile phone. More than half (50.6%) of them had competent internet experience and (89.7%&90.9%) of them had received training courses about the use of e-learning platform and used the e-learning platform through mobile phone, respectively.

Table (5): Reveals that, the highest factor affecting of e-learning platform using among nursing educators was related to environmental factors (33.37 ± 3.790) followed by platform system quality (25.44 ± 4.337) and access to technology (17.65 ± 2.913). While the lowest factor affecting of e-learning platform using among them was related to awareness about the use of e-learning platform (66.69 ± 10.636).

Table (6): Reveals that, the highest factor affecting of e-learning platform using among nursing students was related to environmental factors (22.46 ± 4.512) followed by platform system quality (21.57 ± 5.960) and access to technology (15.32 ± 3.881). While the lowest factor affecting of e-learning platform using among them was related to awareness about the use of e-learning platform (48.07 ± 12.359).

Figure (2): Illustrates that more than one third (37.1%) of nursing students had moderate satisfaction level toward e-learning platform using. While less than one third (30.6%) of them dissatisfied toward e-learning platform using.

Table (7); Shows that there was a highly statistically significant relation between factors affecting electronic learning platform using and nursing students' satisfaction.

Table (1): Frequency distribution of nursing educators regarding their personal characteristics (n=93)

Personal characteristics	No	%
Age (years)		
<30	6	6.4
30-<35	28	30.1
35-<40	30	32.3
40+	29	31.2
Min –Max	32-59	
$\bar{X}\pm SD$	37.94±7.64	
Marital Status		
Unmarried	16	17.2
Married	77	82.8
Residence		
Rural	58	62.4
Urban	35	37.6
Academic degree		
Lecturer	42	45.2
Assistant professor	40	43.0
Professor	11	11.8
Years of experience in teaching process		
<10	28	30.1
10-<15	24	25.8
15-<20	20	21.5
20+	21	22.6
Min- Max	10-33	
$\bar{X}\pm SD$	13.50±6.81	

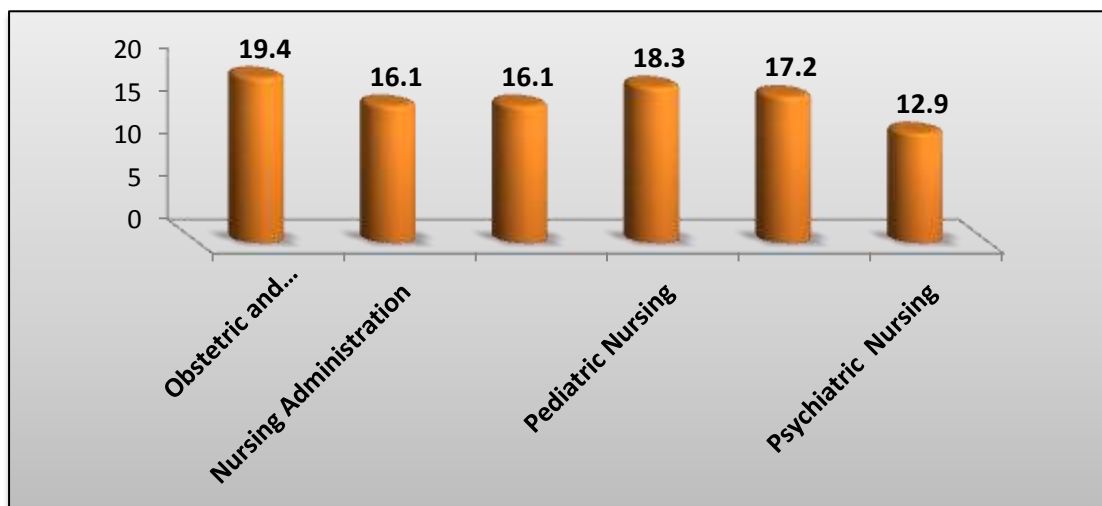


Figure (1): Percentage distribution of nursing educators regarding their academic department

Table (2): Frequency distribution of nursing students regarding their personal characteristics (n=1008)

Personal characteristics	No	%
Academic year		
First year	240	23.8
Second year	288	28.7
Third year	251	24.8
Fourth year	229	22.7
Age		
<20	478	47.4
20+	530	52.6
Min –Max	17-24	
$\bar{X} \pm SD$	19.69±1.44	
Gender		
Female	606	60.1
Male	402	39.9
Marital status		
Unmarried	948	94.0
Married	60	6.0
Residence		
Rural	786	78.0
Urban	222	22.0

Table (3): Frequency distribution of nursing educators regarding their technology experience (n=93)

Item	No	%
Have a computer or laptop		
Yes	92	98.9
No	1	1.1
Attend previous training course about using computer		
Yes	90	96.8
No	3	3.2
Use Microsoft office program		
Yes	90	96.8
No	3	3.2
Type of Microsoft office program used		
Word	25	27.8
Excel	15	16.6
PowerPoint	22	24.5
Access (Database)	12	13.4
All	16	17.7
Phone type		
Simple	2	2.2
Advanced	91	97.8
Internet experience		
Novice	5	5.4

Competent	79	84.9
Expert	9	9.7
Attend training courses about the use of e-learning platform		
Yes	86	92.5
No	7	7.5
Provide lecture on E-learning platform through		
Microsoft teams	88	94.6
Zoom	3	3.2
Skype	2	2.2

Table (4): Frequency distribution of nursing students regarding technology experience (n=1008)

Item	No	%
Have a computer or laptop		
Yes	525	52.1
No	483	47.9
Attend previous training course about using computer		
Yes	119	11.8
No	889	88.2
Use Microsoft office program		
Yes	380	37.7
No	628	62.3
Type of Microsoft office program used	380	100
Word	150	39.5
Excel	50	13.2
PowerPoint	40	10.5
Access (Database)	60	15.7
All	80	21.1
Phone type		
Simple	290	28.8
Advanced	718	71.2
Internet experience		
Novice	323	32.0
Competent	510	50.6
Expert	175	17.4
Attend training courses about the use of E-learning platform		
Yes	904	89.7
No	104	10.3
Use e-learning platform through:-		
Mobile phone	916	90.9
Computer / laptop	92	9.1

Table (5): Mean score and standard deviation of factors affecting using e- learning platform among nursing educators (n=93)

Factors affecting e-learning platform using	Max score	Nursing educators		Ranking
		$\bar{X}\%$	$\bar{X} \pm SD$	
Awareness about e-learning platform	81	82.3%	66.69 ± 10.636	4
Access to technology	21	84.1%	17.65 ± 2.913	3
Platform system quality	30	84.8%	25.44 ± 4.337	2
Environmental factors	39	85.6%	33.37 ± 3.790	1

Table (6): Mean score and standard deviation of total scores of factors affecting of using e- learning platform among nursing students (n=1008)

Factors affecting e-learning platform using	Max score	Nursing students		Ranking
		$\bar{X}\%$	$\bar{X} \pm SD$	
Awareness about e-learning platform	69	69.7%	48.07 ±12.359	4
Access to technology	21	73.0%	15.32 ± 3.881	3
Platform system quality	30	71.9%	21.57 ± 5.960	2
Environmental factors	30	74.9%	22.46 ± 4.512	1

Figure (2): Nursing students' satisfaction levels regarding e-learning platform

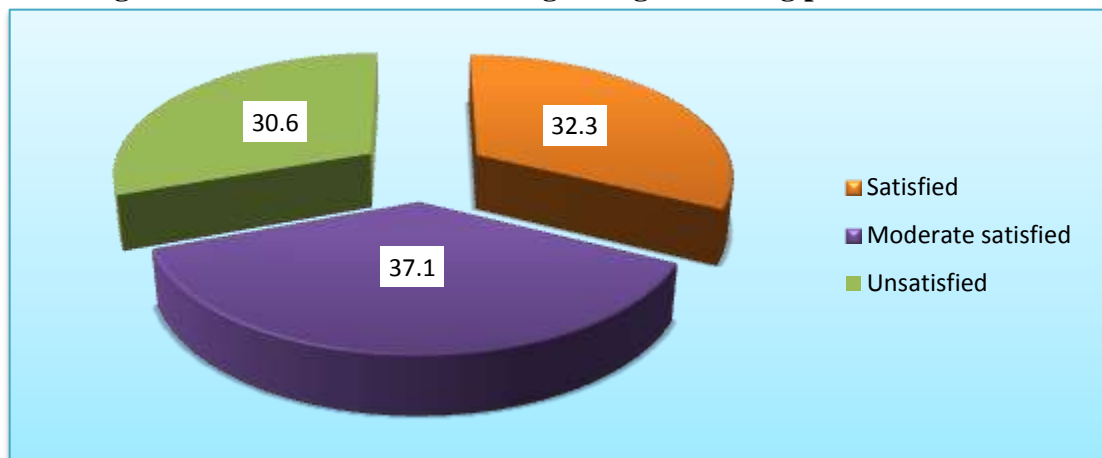


Table (7): Liner regression of factors affecting electronic learning platform using among nursing students regarding their satisfaction

Predictor variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	6.612	2.219		2.979	0.003**
	Total awareness about e-learning platform using	0.831	0.064	0.449	12.936	0.000**
	Total access to technology	1.035	0.203	0.176	5.090	0.000**
	Total platform system quality	1.646	0.135	0.429	12.237	0.000**
	Total environmental factors	0.820	0.134	0.162	6.116	0.000**
a. Dependent Variable: Total satisfaction						

Discussion

In nursing education, the flexibility provided by e-learning allows nurse educators and the students to manage competing interests such as professional development, practice and the family while they continue to teach and learn. E-learning enhances learning experiences as it promotes collaborations and communication between instructors and the students (**Christopher, et al., 2020**). However, there are many important factors that affect intention of nursing educators and students to use e-learning platform, ie information quality, system navigation, system learnability, computer self-efficacy, perceived ease of use, perceived usefulness, visual design, instructional assessment, and system interactivity (**Ramadhan, et al., 2021**).

The nursing student's acceptance of e-learning platform is an integral requirement in the education cycle and the learners' satisfaction is a prerequisite for the effective application of e-learning platform in online environments. The learners' satisfaction typically leads to their enjoyment of the online learning environment when an instructive approach is utilized. It is important to classify the factors that contribute to and affect students' satisfaction with e-learning technology to assist policymakers at learning institutions make decisions regarding its implementation and improvement (**Lin, et al., 2022**).

The present study aimed to assess factors affecting of electronic learning platform using as perceived by nursing educators and students and its relation to nursing students' satisfaction.

Regarding to personal characteristics of the nursing educators, the findings of the present study clearly showed that nearly one third of nursing educators' age ranged between 35 to <40 years old, the majority of them were married, less than two third of them living in rural areas, less than half of them were lecturers, less than one third of them had less than 10 years of experience, less than one fifth of them were worked in obstetrics and gynecology department while the minority of them were working of psychiatric nursing and mental health department.

Concerning the personal characteristics of nursing students, the results of this study revealed that more than one quarter of nursing students were in the second academic year and more than half of them were aged equal and more than 20 years old, more than half of them were females, the majority of them were unmarried, more than three quarters of them living in rural areas.

Regarding technology experience of nursing educators, the present study revealed that the majority of nursing educators had a computer or laptop. This could be due to their need for computer access for their work in teaching, preparing lectures and research activities. The finding of the study in same line with the finding of **Scherer, et al., (2019)** who stated that majority of lecturers use computer for teaching.

Regarding attend previous training course about using computer, the results of the present study revealed that the majority of nursing educators attended previous training course about using computer. This may be due to ICDL course certificate was one of the required papers for attaining Doctorate and promotion for higher degree. This result was in accordance with **Valizadeh, et al., (2021)** who stated that majority of nursing educators held ICDL certificate.

In relation to use Microsoft office program, the results of the present study revealed that majority of nursing educators use Microsoft office program and that they use word program. This may be due to most of teaching staff members took the ICDL course and their work demands which required them to use this program in preparing lectures. This result was supported with **Agboola, (2019)** who stated that most of teaching staff used Word and PowerPoint programs.

Regarding phone type, the results of the present study revealed that the majority of them have an advanced mobile phone. This could be due to technology advancements and the inevitable need for smartphones in work for contact with colleagues and students through mobile applications as WhatsApp and also for use in social life. This result was matched with **Almuwais, et al., (2021)** who found the majority of educators reported that they owned advanced electronic devices.

In relation to internet experience, the results of the present study revealed that the majority of nursing educators had competent internet experience. This could be due to educators use internet for their research requirement and also for using different social media applications as Facebook, WhatsApp and YouTube. This result was supported with **Habieb, et al., (2021)** who found that majority of academic staff members had some experience in using computer and internet.

Regarding training courses about the use of e-learning platform, the results of the present study revealed that the majority of nursing educators received training courses about the use of e-learning platform. This was due to the training workshops and educational videos provided by the faculty information technology unit for teaching staff members and students for shifting to online learning during Covid-19 outbreak. This result was in accordance with **Karasneh et al., (2021)** who found that almost two thirds of educators having a prior experience with online learning, including attending or receiving workshops, webinars, and courses.

Regarding the program used to provide lecture on e-learning platform, the results of the present study revealed that the majority of them use Microsoft teams. This because Microsoft teams is the most popular program used in Moodle platform which is the official university platform. This result was contraindicated with **Ramadhan, et al., (2021)** who found in their study that the Zoom app is the most popular and widely used platform for online nursing education during the pandemic in Indonesia.

Concerning the technology experience of nursing students, the results of present study revealed that more than half of nursing students have a computer or laptop. This may be due to technological equipment become popular and has many benefits and uses today, therefore many families were encouraged to buy it. This result was congruent with **Nyagorme, et al., (2017)** who found that more than half of the nursing students reported that they own a computer (i.e. desktop, laptop, tablet, mobile phone).

Regarding to attend previous training course about using computer, the results of this study revealed that the majority of nursing students doesn't attended previous training course about using computer. This could be due to availability of information that the student could need on the different social media such as YouTube which make most of students depend on themselves or on their friends to learn these programs at home or at cafe instead of paying for these courses and attending more classes at certain times. This result matched with **Mendonça, et al., (2021)** who stated that students didn't take relevant ICT training programs

Concerning use Microsoft office program used, the results of this study revealed that more than three fifth of nursing students reported that they don't use Microsoft office program on their computer or laptop and more than one third of them use word program. This could be due to the high mobility of the students which made the reliance on desktops less likely, but rather the need to depend on their phones. This finding was consistent with **Tania, et al., (2022)** who found that the use of smartphones was more dominant among the students and the use of desktops was rather low among the students.

Regarding phone type, the result showed that less than three quarters of them have advanced mobile phone. This could be due to the undeniable fact that the owing and using advanced technological devices became popular and normal among most of people. This also supported with the study result which shows that majority of students use the e-learning platform through mobile phone which can't be done with simple phones.

In relation to internet experience, the results of this study revealed that half of nursing students had competent internet experience. This could be due to that we are in the era of technology where most youth are using internet every single day for chatting, gaining information, making videos and surfing Facebook. This result was supported with **Akakandelwa & M'kulama, (2018)** who found that the majority of nursing students agreed that their computer literacy was sufficient for the successful online learning. Also this result was in agreement with **Mahmoud, et al., (2020)** who found that more than fifty percent of nursing student agree that they have sufficient internet skill to deal with Moodle.

In relation to training courses about the use of e-learning platform, the results of this study revealed that the majority of nursing students had received training courses about the use of e-learning platform. This could be the training workshops and educational videos provided by the faculty information technology unit for teaching staff members and students for shifting to online learning during Covid-19 outbreak. This result was consistent with **Wozniak, et al., (2021)** who found that more than two third of students indicated that they had received at least some form of e-learning training before moving to a fully online environment. On the other hand, this result was contraindicated with **Nyagorme, et al., (2017)** who report that only 16.0% of the students had received training in e-learning platform.

In relation to use the e-learning platform through mobile phone or computer/laptop, the results of this study revealed that the majority of nursing students used the e-learning platform through mobile phone. This could be due to the flexibility provided by phones in attending lectures as being easy portable device and could be taken easily to any suitable place for the student. This result was in agreement with **Nyagorme, et al., (2017)** who found the smart phone was the most common means of online access among students, followed by the Internet café. In the same line **Karaaslan, et al., (2022)** who found that the students reported that they had participated in distance education lessons with their smartphones.

The finding of current study revealed that the highest factor affecting of e-learning platform using was environmental factors among nursing educators followed by platform system quality and access to technology. This could be due to that to be able to engage in e-learning process, you must have an electronic device as advanced phone or computer or laptop connected with regular internet source within affordable cost and specific place away from distractions and getting support from faculty. All of these requirements are environmental factors. Also this could be due to that a good e-learning platform is a system with great functionality and usability where it eases the users in using and navigating the platform for studying or carrying out a specific task.

This result was supported with **Zalat, et al., (2021)** who found that environmental factors as insufficient/ unstable internet connectivity, inadequate computer labs, lack of computers/ laptops, and technical problems were the highest factors for adapting to e-learning. Also this result was supported with **Lashayo & Md Johar (2018)** who found that environmental factors have positive and significant affect e-learning actual use.

On the other hand, the study result revealed that the lowest factor affecting of e-learning platform using was awareness about e-learning platform among nursing educators. This could be due to that the use of e-learning platform at the time of Covid-19 outbreak was inevitable and not a choice for educators and students which make them considering that their awareness about e-learning platform was not make difference in using it. This result was supported with **Ang, et al., (2021)** who found that awareness about e-learning platform and perceived ease of use has a weak effect on educators' intention to use the online course and this result was incongruent with **Tania, et al., (2022)** who stated that teaching staff members' intentions to use the e-learning system were influenced by both perceived usefulness and satisfaction and have a huge effect on whether or not people want to keep doing what they're doing.

The finding of current study revealed that the highest factor affecting of e-learning platform using was environmental factors among nursing students followed by platform system quality and access to technology. From investigator point of view this may be due to study results showed that a lot of students agreed about having special separate room at home, having an internet Wi-Fi at home the family atmosphere help student to attend online courses and irregular internet speed affects student ability to use e-learning platform which all are environmental factors that affect students' utilization of e-learning. This result was in the same line with **Lee, et al., (2021)** who found that environmental factors was found to statistically predict e-learning perception and e-learning usage.

On the other hand, the study result revealed that the lowest factor affecting of e-learning platform using was awareness about e-learning platform among them. This

could be due to students are already familiar with the function of various social media platforms. Hence, whether the platform is easy to use does not have much effect on their intention to use it. This result was contraindicated with **Apriani, et al., (2021)** who found that most of the nursing students had a positive attitude and response toward the implementation of training program because this training could incline their ability in using information communication and technology in the online teaching and learning process.

In relation to nursing students' satisfaction levels about e- learning platform, the results of present study illustrated that more than one third had moderate satisfaction level toward e-learning platform using. While one third of them dissatisfied toward e-learning platform using. From the investigator point of view, the moderate level of satisfaction among students may be attributed to a variety of factors, including the educators' level of support and follow-up, the level of interaction during learning process, and the educators' various online teaching approaches and being not high satisfaction may be due to the sudden emergency suspension of education, which poses many challenges. It did not provide adequate times for enough training for the fulltime virtual learning, or for accepting and adapting the complete paradigm shift to e-learning which in turn affect students' satisfaction.

This result was in same line with **Bdair, (2021)** who stated that students was moderately satisfied with the new online teaching experience and found it an efficient and effective alternative method. And students reported that the shift to online learning helped them continue their study, sharpened their technological competencies, opened a door to a wide range of information, and definitely helped in maintaining their safety; but they really missed the direct communications with colleagues, nurses, and instructors, and that's affecting their learning somehow.

Also this result was supported with **Hamdy, et al., (2021)** who found that nearly two thirds of nursing student dissatisfied with remote learning while more than on third were satisfied. And this result was in disagreement with **Kee, et al., (2021)** who found that students were satisfied with the use of e-learning platform.

Regarding relation between factors affecting of e- learning platform using and nursing students' satisfaction, the results of this study explored that there was a highly statistically relation between students' satisfaction and factors affecting electronic learning platform using. From the investigator point of view, when the students' utilization is affected in a positive way, that means they are satisfied toward the e-learning platform because when a new medium is introduced, the learner's satisfaction with it has a significant impact on whether they accept it and use it again or not.

The result was supported with **Achmadi & Siregar (2022)** who stated that usage has a significant effect on user satisfaction and the better the usage of an e-learning system, the higher the user satisfaction of the e-learning system will be. Similarity the result was matched with **Puriwat & Tripopsakul (2021)** who indicated that the users of the e-learning system will feel satisfied if the e-learning system provided by the university has a good system quality. This means that users will be satisfied if the e-learning system comes with easy-to-understand guidelines, presents material according to learning needs, supports the learning process, is easy to operate, makes communication between teachers and students more intensive, and has easy access to e-

learning system features. Also this result was in the same line with **Patrick & Dewi, (2022)** who found that factors as usefulness, ease of use, ease of learning, accessibility, and security have a simultaneous effect on user satisfaction.

Recommendations

In the light of the findings obtained from the present study, the following points are recommended:

I- For faculty administration:

- The administration should set up the online learning instructions including attendance, interaction, and assessment tools and publishing it to both educators and students.
- Designing training programs to raise awareness and the ability to use e-learning as an effective training tool, as well as improving the quality of hardware is suggested.
- Faculty management should encourage educators to incorporate the newer teaching methods to engage students without boredom.
- University management in collaboration with faculty management evaluate online learning implementation process to assess the different obstacles in its implementation.

II- For nursing educators:

- The nursing educators need to pay attention in designing the online course content, utilizing the features available in e-learning platform, such that the course will attract the participation and receive satisfaction by the students.
- The nursing educators should use different teaching methods when providing lectures on e-learning platform to reach all students with different learning styles.
- The nursing educators need to pay more attention for feedback about students' assignments and encourage effective communication between students during lectures.

III- For further research:

- Develop scales which assess the outcomes of online learning processes.
- Compare students' satisfaction toward online learning processes at different nursing colleges in the country.
- Assess reasons for nursing educators and students' resistance to adopt online learning in education.
- Examine the effect e-learning platform utilization on students critical thinking and creativity

References:

AbdulRazak, N., & Ali, M. (2021). Challenges of Implementation E-Learning Platforms in Iraqi Universities. *Engineering and Technology Journal*, 37(4C), 400-406.

Achmadi, A., & Siregar, A. (2022). The Effect of System Quality, Information Quality and Service Quality on User Satisfaction of E-Learning System. *The International Journal of Business Review (The Jobs Review)*, 4(2), 103-120.

Agboola, A. (2019): Assessing the Awareness and Perceptions of Academic Staff in Using E-learning Tools for Instructional Delivery in Post-Secondary Institution: case study, *The Innovation Journal: The Public Sector Innovation Journal*, 11(3):1-12

Akakandelwa, A., & M'kulama, A. (2018). Students' Acceptance, Experiences and Satisfaction of Online Learning: A Case of Study of Library and Information Science Students at the University of Zambia. *International Journal of Scientific Research and Innovative Technology*,4(12), 18-50.

Ali, W., (2012). Factors Affecting Nursing Student 's Satisfaction with E- Learning Experience in King Khalid University, Saudi Arabia: *International Journal of Learning & Development*,2(2), 202-215.

Almuwais, A., Alqabbani, S., Benajiba, N., & Almoayad, F. (2021). An Emergency Shift to e-Learning in Health Professions Education: A Comparative Study of Perspectives between Students and Instructors. *International Journal of Learning, Teaching and Educational Research*, 20(6), pp. 16-37.

Al-sammarraie, A, El-Ebiary, A, Kaszem, I, Almandeel, S. & Alshamsi, A. , (2019): E-Learning and Students Satisfaction – Case Study MEDIU, *International Journal of Recent Technology and Engineering (IJRTE)*,7(6S5), ISSN: 2277-3878.

Ang, W., Jedi, A., & Lohgheswary, N. (2021). Factors affecting the acceptance of open learning as e-learning platform by technical course students. *Journal of Engineering Science and Technology*, 16(2), 903-918.

Apriani, E., Inderawati, R., Arianti, A., Wati, S., & Hakim, I. (2021). Implementing E-learning Training toward nursing Virtual Lecturers: The Process, Perspectives, Challenges and Solutions. *International Journal of Emerging Technologies in Learning*, 16(4),240-255.

Bdair, I. (2021). Nursing students' and faculty members' perspectives about online learning during COVID-19 pandemic: A qualitative study. *Teaching and Learning in Nursing*, 16(3), 220-226.

Bismala, L., & Manurung, Y. (2021). Student Satisfaction in E-Learning along the COVID-19 Pandemic with Importance Performance Analysis. *International Journal of Evaluation and Research in Education*, 10(3), 753-759.

Cacheiro-Gonzalez, M., Medina-Rivilla, A., Dominguez-Garrido, M., & Medina-Dominguez, M. (2019). The learning platform in distance higher education: Student's perceptions. *Turkish Online Journal of Distance Education*, 20(1), 71-95.

Chen, T., Peng, L., Yin, X., Rong, J., Yang, J., & Cong, G. (2020). Analysis of user satisfaction with online education platforms in China during the COVID-19 pandemic. In *Healthcare* ,8(3),200. Multidisciplinary Digital Publishing Institute.

Christopher R, de Tantillo L, Watson J (2020). Academic caring pedagogy, presence, and Communitas in nursing education during the COVID-19 pandemic. *Nursing outlook*. 68(6): 822-9. PMID:32981671

Giray, G. (2021). An assessment of student satisfaction with e-learning: An empirical study with computer and software engineering undergraduate students in Turkey under pandemic conditions. *Education and Information Technologies*, 26(6), 6651-6673.

Gorbunova, N., & Kalimullin, A. (2017). Simulation of the Process of Training the Future Primary School Teachers for Organizing Extracurricular Activities. *Ilkogretim Online*, 16(4), 1860-1872.

Habieb, E., El-wkeel, N., Ali, S., & Sabea, M., (2021). Academic Staff and Nursing Students Readiness for E-learning. *International Journal of Novel Research in Healthcare and Nursing*, 8(1), pp: (93-103).

AbouRamady, A., & Eid, W. (2021). Quality of Remote Learning during Outbreak of COVID 19 Pandemic and its Effect on Nursing Students, Satisfaction, *Tanta Scientific Nursing Journal*,21(2), 78-96.

Karaaslan, M., Çelik, İ., Kurt, Ş., Yavuz, A., & Bektaş, M. (2022). Undergraduate nursing students' experiences of distance education during the COVID-19 pandemic. *Journal of Professional Nursing*, 38, 74-82.

Karasneh, R., Al-Azzam, S., Muflih, S., Hawamdeh, S., Muflih, M., & Khader, Y. (2021). Attitudes and practices of educators towards e-learning during the covid-19 pandemic. *Electronic Journal of e-Learning*, 19(4), pp252-261.

Kee, D., Fozeli, A., Sani, N., Mustafa, A., Khalid, N., Chawla, P., & Ganatra, V. (2021). Students' Satisfaction Towards the Use of E-learning during the Global Pandemic. *Asia Pacific Journal of Management and Education (APJME)*, 4(3), 87-102.

Kustono, A. (2021). Improving actual e-learning usage: Evidence from Indonesia. *Journal of Hunan University Natural Sciences*, 48(1),498-991.

Lashayo, D., & Md Johar, M. (2018). Instructor adoption of E-learning systems in Tanzania's Universities: A proposed multi-factors adoption model (MFAM11). *JOIV: International Journal on Informatics Visualization*, 2(2), 76-80.

Lin, G., Wang, Y., & Lee, Y. (2022). Investigating factors affecting learning satisfaction and perceived learning in flipped classrooms: the mediating effect of interaction. *Interactive Learning Environments*,12(5), 1-22.

- Mahmoud, S., El Magrabi, N., & Mohamed, F. (2020).** Faculty of Nursing Teaching Staff members and Students Attitudes toward e-learning. *IOSR Journal of Nursing and Health Science*, 4(4), 36-45.
- Mastan, I., Sensuse, D., Suryono, R., & Kautsarina, K. (2022).** Evaluation of distance learning system (e-learning): A systematic literature review. *Jurnal Teknoinfo*, 16(1), 132-137.
- Mendonça, J., Babo, L., & Pinto, C. (2021, April).** Adaptation to emergency remote teaching by students with distinct ICT backgrounds. In *2021 IEEE Global Engineering Education Conference (EDUCON)* (pp. 1654-1659).
- Nyagorme, P., Qua-Enoo, A., Bervell, B., & Arkorful, V. (2017).** The Awareness and Use of Electronic Learning Platforms: A Case of a Developing Country. *World Journal of Computer Application and Technology*, 5(2), 13-23.
- Opeyemi, O., Adeyemi, A., Olajuwon, T., Nike, O., & Oloruntosin, B. (2019).** Perception of nursing students towards online learning: A case study of Lautech Open and Distance Learning Centre, Ogbomoso, Oyo State, Nigeria. *Galore International Journal of Health Sciences and Research*, 4(4), 23-30.
- Ouadoud, M., Rida, N., & Chafiq, T. (2021).** Overview of E-learning Platforms for Teaching and Learning. *Int. J. Recent Contributions Eng. Sci. IT*, 9(1), 50-70.
- Puriwat, W., & Tripopsakul, S. (2021).** The impact of e-learning quality on student satisfaction and continuance usage intentions during covid-19. *International Journal of Information and Education Technology*, 11(8), 368-374.
- Puška, A., Puška, E., Dragić, L., Maksimović, A., & Osmanović, N. (2021).** Students' satisfaction with E-learning platforms in Bosnia and Herzegovina. *Technology, Knowledge and Learning*, 26(1), 173-191.
- Ramadhan, A., Hidayanto, A., Salsabila, G., Wulandari, I., Jaury, J., & Anjani, N. (2021).** The effect of usability on the intention to use the e-learning system in a sustainable way: A case study at Universitas Indonesia. *Education and Information Technologies*, 15(1), 1-34.
- Scherer, R.; Siddiq, F.; and Tondeur, J. (2019).** The technology acceptance model (TAM): A meta-analytic structural equation modelling approach to explaining teachers' adoption of digital technology in education. *Computers and Education*, 128, 13-35.
- Shandra, N., & Chystiakova, I. (2021).** Synchronous and asynchronous distance learning: benefits and limitations. *Publishing House of University of Technology, Katowice*, 4(1), 61-77.

Sun, P. , Tsai, R. , Finger, , Chen, Y. , & Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & education*, 50(4), 1183-1202.

Tania, K., Abdullah, N., Ahmad, N., & Sahmin, S. (2022). Continued Usage of E-Learning: A Systematic Literature Review. *Journal of Information Technology Management*, 14(5th International Conference of Reliable Information and Communication Technology (IRICT 2020)),14(5), 245-254.

Vadakalur, K., & Sankar, J. P. (2020). Factors affecting the quality of e-learning during the COVID-19 pandemic from the Perspective of higher education students. *Journal of Information Technology Education*,19, 731-753.

Valizadeh, L., Asghari , M., Jari, A., & Jalili, P. (2021). Comparing the effects of education through compact disk and social media on knowledge and performance of nursing educators. *Nursing and Midwifery Studies*, 10(2), 92-98.

Viktoriia V, Larysa V, Svitlana Y, Tetiana V, & Iryna V, (2020): Implementation of Modern Distance Learning Platforms in the Educational Process of HEI and their Effectiveness: *International Journal of Higher Education* 9(7),217-229.

Virtanen, M. , Kääriäinen, M., Liikanen, E., & Haavisto, E. (2017). The comparison of students' satisfaction between ubiquitous and web-based learning environments. *Education and Information Technologies*, 22(5), 2565-2581.

Wozniak, K., Kwon, S., & Pate, A., (2021). Chicagoland PK-12 Teachers' Experiences Transitioning to e-Learning amid COVID-19, *The Internet and Higher Education*, 2(2-3), 87-105.

Wu, E., Lin, C., Ou, Y., Liu, C., Wang, W., & Chao, C. (2020). Advantages and constraints of a hybrid model K-12 e-learning assistant chatbot. *IEEE Access*, 8(1), 1-14.

Yekefallah, L., Namdar, P., Panahi, R., & Dehghankar, L. (2021). Factors related to students' satisfaction with holding e-learning during the Covid-19 pandemic based on the dimensions of e-learning. *Heliyon*, 7(7), e07628.

Zalat, M., Hamed, M., & Bolbol, S. (2021). The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. *PLoS One*, 16(3), 1-12.