

## University Nursing Students' Perception and Challenges towards E-Learning and Recommended Overcoming Ways

Sahar Mousa Soliman<sup>1</sup>, Heba Ali Hassan<sup>2</sup>, Fatma Ata<sup>3</sup>

<sup>1</sup> Maternal and Neonatal Health Nursing, Faculty of Nursing, Ain Shams University, Cairo, Egypt

<sup>2</sup> Nursing Administration Department, Faculty of Nursing, Ain Shams University, Cairo, Egypt

<sup>3</sup> Psychiatric/Mental Health Nursing, Faculty of Nursing, Ain Shams University, Cairo, Egypt

### Abstract

**Background:** E-learning is a powerful tool that transforms the traditional learning method to strengthen the capacity of teaching and learning. Detecting challenges of E-learning met by undergraduate nursing students could contribute to improving the quality of the learning environment in nursing education. **Aim:** evaluate university nursing students' Perception and challenges towards E-learning and recommend overcoming ways. **Design:** A mixed-methods triangulation design was used to collect both quantitative and qualitative data through a web-based form. **Setting:** The study was conducted at the Faculty of Nursing affiliated to Ain Shams University, Cairo, Egypt. **Subjects:** The convenient sampling technique composed of (340) university nursing students enrolled in the nursing program during the second semester of the academic year (2022-2023), in the second and fourth batches. **Data collection tools:** It consists of four parts: demographic characteristics, the perception of students toward E-learning, Challenges of E-learning, and the recommended overcoming ways. **Results:** The majority of second and fourth academic years nursing students had positive Perception of the benefits of E-learning. while their Perception during attending e-learning for fourth-year nursing students were higher than second year. In addition, three-quarters of the fourth-year academic nursing students reported no challenges faced them during E-learning compared with two-thirds of the second year. **Conclusion:** there was a positive statistical correlation between overall Perception and challenges toward E-learning as reported by nursing students. Likewise, there was a statistically significant difference between the student's academic years and their overall Perception and challenges toward E-learning as reported by nursing students. **Recommendations:** Enhance Internet speed and make Internet packages cheaper or even free and supply e-learning tools and computer skills training for students.

**Keywords:** University nursing student, Perception, Challenges, and E-learning

### Introduction

E-learning is a late 20th-century technological development in education. E-learning is a form of distance learning that harnesses electronic technology and internet platforms for conducting teaching and learning processes. E-learning offers tools like e-mail, online discussions, forums, online quizzes, assignments, and instructional materials, such as audio, video, and text mediums. Students can access the information whenever they want if they have Internet access and a proper device. When it is not easy to meet face-to-face, group members can use online tools to complete their tasks (Karasneh et al., 2021).

E-learning refers to an information technology-integrated learning style, where diachronous and synchronous learning is achieved using various information and technology tools. In e-learning, learners can access the course via online technologies, such as the Internet, communicative tools, and other Information and Communication Technologies (ICT) (Lawn et al., 2017).

E-learning learning is a powerful tool that transforms the traditional learning method to strengthen the capacity of teaching and learning. It also supplies interactivity and active learning, which promotes collaboration and idea-sharing among students and instructors. E-learning could be more flexible to offer a

substitutional learning activity instead of the traditional classroom model and it is a process to boost study by gaining or supporting the distribution of knowledge, through various technological methods such as audio chatting, video conferencing, and online discussion (Odit-Dookhan, K. 2018).

Universities in different countries have begun to use e-learning in education and teaching for students nowadays & trying to make the most of the technological revolution to supply a better educational learning environment for different participants (Zhang, YU. 2020).

Higher educational ministries all over the world face a variety of challenges related to the successful implementation, maintenance, and development of e-learning plans due to the rapid shift to e-learning the students showed many challenges from their point of view, as; low internet access, lack of requisite digital equipment and accessories, high cost of efficient gadgets, and physical problems as headache and eye strain (Palvia et al., 2018).

Challenges affecting the e-learning process include low internet penetration, low public appreciation for e-learning, and a deficiency of online educational sources. Additionally, challenges leading to the failure of e-learning are institutional factors such as lack of understanding of online education, patterns of online learning, deficiency of management support for online education, number of students registered, and faculty members' qualifications (Abbasi et al., 2020).

### **Significance of the study:**

Considering the conditions that passed through Egypt and with the World Health Organization announcing the COVID-19 pandemic (World Health Organization 2020). The Ministry of High Education decided to continue the learning process and implement e-learning at governmental educational institutions. for the implementation of an efficient and effective e-learning environment, a lot of time and cost is needed for preparing the technological infrastructures, getting, and keeping devices and equipment, training human

resources, and developing online content (Dhawan, 2020).

implementation of e-learning in a mainstream program with various students could be considered a different learning environment, especially from the student's point of view, and could have challenges shared with students. Detecting challenges of e-learning met by undergraduate nursing students could contribute to improving the quality of the learning environment in nursing education. So, the present study aims to assess the nursing students' Perception and challenges facing e-learning and recommend overcoming ways.

### **Aim of the Study**

This study aims to evaluate university nursing students' perception and challenges towards e-learning and recommend overcoming ways.

#### **This aim was achieved through:**

- 1- Assessing the perception of university nursing students toward e-learning.
- 2- Assessing the challenges of university nursing students toward e-learning.
- 3- Suggesting recommended ways to overcome challenges towards e-learning.

#### **Research questions:**

- 1- What is the perception of university Nursing Students toward E-learning?
- 2- What are the challenges of university Nursing Students toward E-learning?
- 3- What are the recommended ways to overcome challenges towards E-learning?

### **Subjects & Methods**

#### **Research design:**

A mixed-methods triangulation design was used to collect both quantitative and qualitative data through a web-based form.

#### **Setting:**

The study was conducted at the Faculty of Nursing affiliated to Ain Shams University, Cairo, Egypt.

**Subjects:**

A convenient sampling technique composed of (340) university nursing students enrolled in the nursing program during the second semester of the academic year (2022-2023), classified into (208) students in the second batch and (132) students in fourth batch.

**Inclusion Criteria:**

University nursing students were willing to participate in the study, used E-learning education, and enrolled in the second and the fourth batches in the academic year 2022- 2023.

**Tools for data collection:**

The data was collected through a self-administered questionnaire via online mode. It was developed by researchers based on a recent related literature review (Dibya, Ramchandra, & Sakun, 2021) and (Assareh, & Bidokht, 2011) validity and reliability of this tool were evaluated. It consists of four parts:

**The first part: demographic characteristics of nursing students**

The researchers designed it to assess the demographic characteristics of nursing students, including age, sex, residence, marital status, pre-university education, and information of online classes.

**The second part: the perception of students toward E-learning.**

It was designed by researchers based on relevant literature to assess the perception of students toward E-learning education. It consists of twenty-two items and holds two domains: Nursing students' Perception toward the benefits of E-learning (10 items), and Nursing students' Perception while attending online classes (12 items)

**Scoring system:**

The subjects' response was rated on a five-point Likert Scale from "1" (strongly disagree) to "5" (strongly agree). The score of the items was summed up and the total was divided by the number of the items, giving a mean score for each domain of the e-learning was calculated, and mean overall scores were calculated as well, summing all two domains gives an overall score for student perception toward e-learning. These scores were converted into percentage scores. The total scores cut off less than 60% were considered negative

perception, while the scores of 60% and more were considered positive perception toward e-learning (Bhuasiri, et al., 2012).

**The third part: Challenges of E-learning**

It was designed by researchers based on relevant literature to assess challenges faced by Nursing Students due to applying E-learning. It consists of (21 items) and holds three dimensions: Curriculum content (5 items), Technical and Management support (5 items), Learners' characteristics (7 items), and Infrastructure and technology (4 items).

**Scoring system:**

The subjects' response was rated on a five-point Likert Scale from "1" (strongly disagree) to "5" (strongly agree). The score of the items was summed up and the total divided by the number of the items, giving a mean score for each dimension of the challenges of e-learning was calculated. These scores were converted into percentage scores. Scores of 60% and more show that challenges occurrence were present while scores of less than 60% indicate that challenges occurrence were absent during applying the e-learning system (Al-Fraihat, et al, 2020).

**The fourth part: The recommended overcoming ways**

It included one open-ended qualitative question to show the suggested recommended ways overcoming challenges during E-learning.

**Validity and reliability:**

The tool parts were evaluated and evaluated for their face and content validity by the jury group. The five experts from faculty members (professors) in the nursing field with different nursing Administration, Psychiatric/Mental Health Nursing, medical and surgical nursing, critical care nursing, and obstetrics nursing to find the relevance, clarity, and completeness of the tools. Experts elicited responses were either agreed or disagreed with the face and content validity. The required corrections and modifications were made. The items on which 95% or more of the experts agreed were included in the proposed tool.

The reliability of the tool parts was assessed by measuring their internal consistency by deciding the Cronbach alpha coefficient,

which proved to be high as showed in the following table:

Testing the reliability of the purposed data collecting tools was done by Alpha Cronbach test which was 0.86 for the perception of students toward e-learning tool, 0.88 for the challenges facing university nursing students toward e-learning tool and was 0.89 for the open-ended qualitative question to find the proposed suggestions recommended overcoming ways.

#### **Pilot study:**

A pilot study was carried out on 10% of the university nursing students to test the applicability, of the study and the clarity of the designed questionnaire, as well as to estimate the time needed to fill in the tool, the university nursing students of the pilot study were included in the study's subjects because of there was no modifications were done.

#### **Fieldwork:**

The study was performed at the Faculty of Nursing, Ain Shams University in the second semester of the academic year 2022-2023 during the period from March to June 2023. Before data collection, the researchers introduced themselves and explained the purpose of the study via "WhatsApp" application to all students. The confidentiality of any obtained information was assured, and the students were informed about their right to participate or not in the study. Data was collected via an online self-administered questionnaire, which was prepared by Microsoft Forms.

Before completing the questionnaire, nursing students were asked to fill out the first part concerned with demographic characteristics such as age, sex, residence, marital status, pre-university education, etc., and information about E-learning. Each student responded to the second part about their perception of E-learning and the third one concerned with the challenges faced due to using E-learning, both the second and third parts were categorized into closed-ended questions, and the students' responses through a specific range of answers to choose from. **Finally**, students were asked to express themselves to answer the open-ended qualitative question to find the suggested recommended overcoming ways for challenges that could be

faced during E-learning. Participants were also asked to omit their names when filling out the tool.

#### **Ethical consideration:**

The research approval was obtained from the faculty of nursing research ethics committee before starting the study. The researcher clarified the purpose and aim of the study to the heads of the departments and the university nursing students included in the study. Written consent was obtained from the university nursing students to ensure their willingness to engage in the study. The researchers kept the anonymity and confidentiality of the subjects' data. University nursing students were informed that they are allowed to withdraw from the study at any time without penalty. The students were also informed that the participation was voluntary and would have no effect on their academic standing if they chose to participate or not. Furthermore, all identifications were kept confidential. All students had the choice to contact the researchers for questions.

#### **Compliance with Ethical Standards**

All procedures performed in this study followed the ethical standards of the Ethical Committee of Scientific Research of the Faculty of Nursing, Ain Shams University, and were approved (study number 22.12.42).

#### **Statistical analysis:**

Analyzing the data collected was done by using several methods that were used, it was inputted into a Microsoft Excel worksheet. The collected data was analyzed using the Statistical Package for Social Science (SPSS) version 22. A descriptive statistical analysis was used to analyze the data. Both descriptive statistics (frequency, percentage, mean, and standard deviation). These statistics were gathered from sections and then compared for each category. Regarding the qualitative data obtained through the open-ended questions were analyzed using the thematic analysis, the researchers went through the transcript line by line and word by word very closely, extracting significant statements and coding each of them. Then the codes merged into categories, clustered together into sub-themes, and then major themes. The checking was performed to confirm the identified structure from the students'

descriptions were transcribed and translated into English.

### Results:

**Table 1** shows the demographic characteristics of the nursing students. Most students were aged between 20 to 25 years old (77%), female (73%), and had completed general secondary school as their pre-university education (76%). Additionally, the highest of them were single (95%) and lived in urban residences (69.6%).

**Table 2** presents the nursing students' information regarding the e-learning. Of the 340 participants, 83% had internet availability at home, with 81% using mobile phones as their tool to access the e-learning platform. Most of them (69%) used Wi-Fi as their source of internet.

**Table 3** shows the nursing students' Perception of the benefits of e-learning. Most students had a high perception of e-learning's benefits, with the highest mean scores ( $4.59 \pm 0.88$ ,  $4.53 \pm 0.91$ , respectively) among fourth-year nursing students in the items of "the Possibility of working with e-learning" and "Accommodates diverse types of learning styles". The highest mean scores ( $4.47 \pm 1.48$ , and  $4.15 \pm 0.91$ , respectively) among second-year nursing students were in the items "Improved collaboration and interactivity among students" and "Access study resources effectively".

**Figure 1** shows the overall perception of nursing students toward the benefits of E-learning. It said that the majority of both 82% of second and 80% of fourth academic years nursing students had positive perception towards the benefits of E-learning.

**Table 4** shows the university nursing students' Perception while attending e-learning. Fourth-year nursing students' Perception were higher than second-year nursing students' Perception on most items. The overall mean score of the fourth-year students was higher than that of the second-year students ( $2.94 \pm 0.25$  vs.  $2.01 \pm 0.23$ ). The majority of students had a high perception while attending e-learning, with the highest mean scores ( $3.62 \pm 0.23$ ,  $3.52 \pm 0.69$ ,  $3.52 \pm 1.01$ ,  $3.50 \pm 0.73$ , respectively) among fourth-year nursing students in the items of "Student understanding of E-learning with lecturers", "There are wider and more interactions/networks during E-learning", "E-learning increases students'

independence and skills in using media", and "E-learning increases learning activities such as asking, answering, taking notes, and discussing". Most second-year nursing students had a high perception while attending e-learning, with the highest mean scores ( $3.93 \pm 0.59$ ,  $3.21 \pm 0.95$ , respectively) in the items of "E-learning increases student interest in being able to access other online materials" and "E-learning can improve social competence in students".

**Table 5** represents the distribution of e-learning challenges regarding curriculum content, technical and management support, and dimensions from the nursing students' perspective. As showed from the table e-learning challenges items regarding curriculum content, the highest percentage of nursing students (75%) disagree/strongly disagree with "Difficult accessibility of e-learning resources as audio/video material, PDF ...etc." As well as e-learning challenges items about technical and management support, the highest percentage of nursing students (85%) disagree/strongly disagree that "Lecture displays are not compatible with the use of e-learning and (83%) disagree/strongly disagree that "Lack of support services such as tutors".

**Table 6** stands for the distribution of e-learning challenges regarding learners' characteristics, infrastructure, and technology dimensions, from the nursing students' perspective. As shown from the table e-learning challenges items regarding learners' characteristics, more than half of nursing students (57.2%) agree/strongly agree with the "lack of interaction with students through using e-learning platform". As well as e-learning challenges items regarding infrastructure, and technology dimensions, the highest percentage of nursing students (90%) disagree/strongly disagree with "The E-learning system design is not flexible and difficult to use" and (80%) disagree/strongly disagree with "The rules and directions of e-learning platform are difficult for me".

**Figure 2** shows the percentage of challenges faced by nursing students during E-learning. It has been seen that during E-learning, 72% of fourth-year academic nursing students reported no challenges, while 63% of second-year academic nursing students reported the same.

**Table 7** shows the relation between academic years, overall Perception, and challenges toward E-learning as reported by nursing students, this finding shows the mean score of overall

Perception toward E-learning of fourth-year nursing students ( $4.37 \pm 2.15$ ) is higher than the mean score of second-year nursing students ( $4.28 \pm 1.45$ ), while the mean score of Challenges toward E-learning reported by second-year nursing students ( $3.83 \pm 1.12$ ) is higher than the mean score of fourth-year nursing students ( $3.52 \pm 1.57$ ). There was a statistically significant difference between

the student's academic years and their overall Perception and challenges toward E-learning as reported by nursing students.

**Table 8:** showed that there was a positive statistical correlation between overall Perception and challenges toward E-learning as reported by nursing students with ( $r = 0.522$  and  $p < 0.001^*$ ).

**Table (1): demographic characteristics of studied nursing students (n=340)**

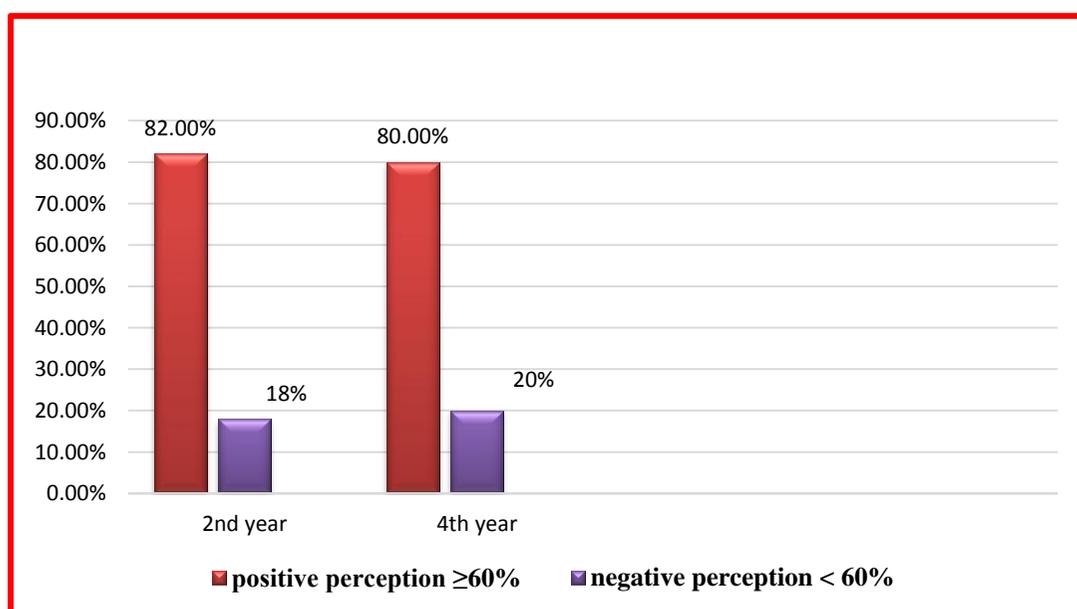
demographic	Frequency	Percent
<b>Age:</b>		
<20	80	23
20 ≤ 25	260	77
Mean ±SD	20 ± 2.24	
<b>Gender:</b>		
Male	93	27
Female	247	73
<b>Marital status:</b>		
Single	322	95
Married	18	5
<b>Residence</b>		
Urban	236	70
Rural	104	30
<b>Pre-University Education</b>		
General Secondary school	256	76
Technical Institute diploma	94	24
<b>Academic year</b>		
Second year	208	61
Fourth year	132	39

**Table 2: Information regarding the e-learning (n=340)**

items	Frequency	Percent
<b>Availability of internet at home:</b>		
Yes	281	83
No	59	17
<b>Tools used to access the e-learning platform:</b>		
Mobile phone	272	81
Tablet	30	9
Desktop computer	6	1
Laptop	32	9
<b>Source of the internet:</b>		
Wi-Fi	235	69
Telephone line	15	4
Mobile data	90	26

**Table 3: Mean score of nursing students' Perception of benefits of E-learning (n=340)**

Items	Fourth year (n=132) (Max=5) Mean± SD	Second year (n=208) (Max=5) Mean± SD
	Flexibility in Time and Space	3.23±0.99
Ease and quick sharing of educational material	3.13±0.94	3.11±1.07
Improved collaboration and interactivity among students	3.61±0.93	4.47±1.48
Possibility of working with e-learning	4.59±0.88	3.85±1.04
Accommodates diverse types of learning styles	4.53±0.91	3.93±0.89
Quick feedback	4.52±1.01	3.92±0.97
Wide and diverse interactions	4.36±0.98	3.72±0.84
Access study resources effectively	4.18±0.88	4.15±0.91
Updated learning material	4.68±0.76	3.81±0.95

**Figure 1: Overall Perception of nursing students toward the benefits of E-learning (n=340)**

**Table 4: Mean score of university nursing students' Perception while attending the E-learning (n=340)**

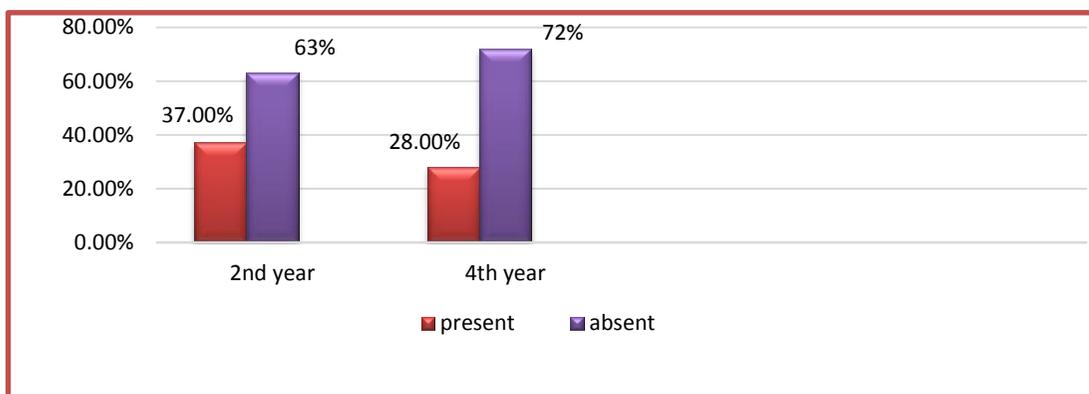
Items	Fourth year (n=132)	Second year (n=208)
	(Max=5) Mean± SD	(Max=5) Mean± SD
Student understanding of E-learning with lecturers	3.62±0.23	2.65±1.09
There are wider and more interactions/networks during E-learning	3.52±0.69	2.12±1.00
There is an increase in the motivation of students and lecturers when E-learning	3.13±0.64	2.11±1.07
Lecturer material updates are more comprehensive during E-learning	2.61±0.52	2.47±1.48
Collaboration and interaction between students are better when E-learning	2.25±1.44	2.21±1.34
E-learning increases learning activities (asking; answering; taking notes; and discussing)	3.50±0.73	2.85±1.04
E-learning increases student interest in being able to access other online materials	2.53±0.51	3.93±0.59
E-learning increases students' independence and skills in using media	3.52±1.01	1.31±0.97
E-learning can enhance the learning experience with various platforms/media	3.36±0.98	1.42±0.77
E-learning can improve students' media/platform skills	2.18±0.88	2.27±0.90
E-learning can improve social competence in students	1.68±0.76	3.21±0.95
<b>overall mean score</b>	<b>2.94±0.25</b>	<b>2.01±0.23</b>

**Table 5: Distribution of e-learning challenges regarding curriculum content, and technical and management support, dimensions from the nursing students' perspective (n=340)**

Items	Percentages (%)		
	++Agree / Agree	Uncertainly	++ Disagree / Disagree
<b>Curriculum content dimension:</b>			
Difficult to understand the contents of the subject through e-learning.	35%	15%	50%
Difficult accessibility of e-learning resources such as audio/video material, PDF.	10%	15%	75%
Decline interaction with colleagues and teacher	16 %	23%	61%
Difficult accessibility of course notes/feedback about the lecture	63%	20%	17%
<b>Technical and Management support dimension:</b>			
Lecture displays are not compatible with the use of e-learning	7%	8%	85%
The software of E-learning is complicated to use	20%	23%	57%
Lack of technical aid to manage technological problems	16%	17%	67%
Lack of technology/software needed for home access problems with internet access	10%	14%	76%
Lack of support services such as tutors	7%	10%	83%

**Table 6: Distribution of e-learning challenges regarding Learners' characteristics, and Infrastructure and technology dimensions from the nursing students' perspective (n=340)**

Items	Percentages (%)		
	++Agree / Agree	Uncertainly	++ Disagree / Disagree
<b>Learners' characteristics dimension</b>			
Lack of sufficient knowledge and skill in the use of e-learning.	15%	15%	70%
Lack of devices to use for e-learning.	16%	20%	64%
Lack of self-confidence during e-learning platform	26%	17%	57%
Lack of interaction with students through using the e-learning platform.	57.2%	8.0%	34.8%
Lack of language skills and typing skills for e-learning platform	41.3%	8.2%	50.5%
<b>Infrastructure and technology dimension:</b>			
No internet connection.	40%	10%	50%
The rules and directions of the e-learning platform are difficult for me	8%	12%	80%
Technical problems during the online class	27%	13%	60%
Lack of IT support while using the e-learning platform	11%	10%	79%
The E-learning system design is not flexible and difficult to use	7%	3%	90%

**Figure 2: percentage of challenges faced by nursing students while E-learning (n=340)****Table 7: Relation between academic years, overall Perception, and challenges toward E-learning as reported by nursing students.**

items	Academic years		ANOVA	p-value
	Second year	Fourth year		
<b>Overall perception toward E-learning</b>	4.28 ±1.45	4.37±2.15	3.340	<0.001**
<b>Challenges toward E-learning</b>	3.83±1.12	3.52±1.57	3.067	<0.001**

(\*) statistically significant at  $p < 0.05$  (\*\*) highly statistically significant at  $p \leq 0.001$

**Table (8): Correlation between overall Perception and challenges toward E-learning as reported by nursing students.**

Variables	Overall Perception	
	R	P
Challenges	0.522	0.001**

R: Pearson coefficient statistically significant at (p =0.001).

**Table (9): University nursing students' responses to the recommended ways to overcome challenges towards e-learning.**

Theme / sub-themes	Students Responses	Percentage
<b><u>Main them</u></b> <b>The Recommended ways to overcome challenges towards E-Learning</b>		
<b><u>Sub-themes</u></b> <b>Improving the skills and abilities of students and fostering better interaction among them while using the e-learning platform</b>	<ul style="list-style-type: none"> <li>• "Providing discs with recorded lectures" 68%</li> <li>• "Using more easy applications such as what's app, blackboard, or zoom." 78%</li> <li>• "Training students by performing electronic exams". 93%</li> <li>• "Learning and teaching resources are available on the e-learning platform". 59%</li> <li>• "Teachers use more suitable ways of teaching." 49%</li> <li>• "I recommend using an e-learning platform for all students." 87%</li> <li>• "Not obligated to attend lectures, especially when there are barriers to attending." 80%</li> <li>• " Taking lecture handouts like the traditional lectures". 97%</li> <li>• "Should do examples, questions, and final revisions before the exams. " 85%</li> <li>• " Conducting Continuous practical training for the students about computer skills. " 93%</li> <li>• "Choose the proper time to make online classes." 93%</li> <li>• "Keep in mind that all assignments could be managed online, meetings are done on video, and all lessons are virtual." 79%</li> </ul>	
<b>Improving the system and supplying top-of-the-line facilities and resources to guarantee a smooth and hassle-free E-learning</b>	<ul style="list-style-type: none"> <li>• "Being an E-learning platform safe, comfortable, more free independence, better understanding, competence satisfies intellectual curiosity, saves time and energy." 92%</li> <li>• "Learning resources should be developed as animated videos should be made for clarification and more illustrations." 87%</li> <li>• "Increase methods of lecture displays like PDF, Word, and PowerPoint presentations." 86%</li> <li>• "Improve the quality of the sound of lectures." 79%</li> <li>• "Extending the duration of assignment submission until all the students could submit. " 74%</li> </ul>	

## Discussion

Nowadays, with the fast growth of knowledge, a new approach has been developed to provide educational content and facilitate interaction between the learner and the teacher around the world using computer networks known as e-learning, so universities around the world effort to take the maximum benefit out from the technological revolutions and offer a better teaching-learning environment for various students, teachers, and administrators (**Al-Gamdi, and Samarji 2016**).

Egypt faced steady obstacles in shifting the conventional education system to e-learning. A unique pressing challenge was converting traditional courses to electronic ones (**Rapanta, et al., 2020**). There are several factors affecting the success of E-learning in educational institutions. Hence, the successful implementation of E-learning requires continuous evaluation to ensure its effectiveness and satisfaction of the students (**Al-Fraihat, et al., 2020**). So, the present study aimed to evaluate university nursing students' perception and challenges towards e-learning and recommended overcoming ways.

Concerning the demographic characteristics for the studied nursing students the present study illustrated that most of the nursing students aged from 22 to 25 years old. Concerning sex, two-thirds of the nursing students were females and had general secondary school. Regarding marital status, most of them were single, and more than half of them lived in urban residences.

Concerning the nursing students' information regarding e-learning. The present study findings revealed that most nursing students had internet availability at home and used mobile phones as a tool to access e-learning platforms, and most of them used Wi-Fi as a source of internet. From the researcher's point of view, this is due to the availability and ease of use of mobile phones in online learning and the useful use of Wi-Fi as a source of internet. These findings were like the study conducted by **Diab and Elgahsh (2020)**, who mentioned that most of the nursing students used the mobile phone to access the online classes. In addition, these results are compatible

with **Abdelrazek and Abdallah (2021)**, who concluded that most of the students studied had a mobile device for their e-learning activities and used access to the internet at home.

Regarding nursing students' Perception of the benefits of E-learning. The present study revealed that most of them responded with the possibility of working with e-learning and accommodating several types of learning styles. From the researcher's point of view, this could be due to the ease with which online learning can be obtained, as well as the constant availability of distant learning resources and media. The faculty supplies all information and guidance for an explanation of the learning management system so students accommodate e-learning. A similar finding was consistent with a study conducted in Egypt by **Ayed et al., (2022)** who revealed that most academic nursing students had response easily access study resources and material.

Along the same line, a study was conducted in Saudi Arabia by **El-Sabagh, (2021)** who mention that E-learning accommodates different types of learning styles. Also, this finding is incongruent with a study conducted in Pakistan by **Adnan, (2020)** who revealed that the majority of the surveyed higher education students had reservations about online/digital learning, lack of access to computers and internet facilities.

Concerning total Perception of nursing students toward benefits of E-learning. The present study findings revealed that most second and fourth-academic years nursing students had a positive perception of the benefits of E-learning. From the researcher's point of view, online learning was easily accessible, with a recurrent explanation website for students by academic staff, consistent guidance, and enjoyable online activities. A Learning Management System (LMS) offers various kinds of tools like communications tools, academic calendars, subject content, assignment submission, clinical document submission, online tests, surveys, course syllabi, and timetables, as well as the widespread technology among the new generations helping the students to be aware of dealing with online tools and searching regarding their subjects. Also, students' effective preparation for using

models and programs for the application of online learning is assigned by the Ministry of Higher Education

This finding was consistent with a study conducted in India by **Saravanakumar et al., (2022)** who revealed that the majority of the studied sample had high perception and satisfaction regarding online learning. Along the same line study conducted in Saudi Arabia **Alshehri, Rutter & Smith, (2019)** who showed that there was a high acceptance and perception of LMS depended on performance expectancy, social influence, and technical support were direct contributors towards an individual's behavioral intention to use (LMS). But this result is different from **Koirala et al., (2020)** who found that almost half of the respondents had a negative perception towards online learning.

concerning the distribution of e-learning challenges regarding curriculum content, technical and management support, and dimensions from the nursing students' perspective. The findings of this study wrote down that the highest percentage of nursing students disagree/strongly disagree with " Difficult accessibility of e-learning resources as audio/video material, PDF. " As well as e-learning challenges items about technical and management support, the highest percentage of nursing students disagree/strongly disagree that " Lecture displays are not compatible with the use of e-learning and " Lack of support services such as tutors".

Regarding the results of current study about the overall perception of students towards e-learning was positive that because of the faculty of nursing used e-learning in teaching in previous years. These findings disagreed with the study done by **Al-Balas et al., (2020)** who reported that technical, institutional, and student barriers are examples of barriers that affect e-learning, and with the study conducted in Iraq by **Al-Azawei et al., (2017)** who found that lack of support was identified as one of the barriers to e-learning.

This result is congruent with **Osman, et al., (2018)** mentioned that instructors play a critical role in aiding students in achieving educational goals, and their active participation in the e-learning system through prompt response, motivation, support, suggestion, and

assessment can significantly increase student satisfaction. Meanwhile, this result is matching with the study done by **Aldowah et al., (2019)** who reported that course characteristics (course design and course content) might play a key role in shaping the learning process and so, motivate students to use and accept an e-learning system.

In respect of the distribution of e-learning challenges regarding learners' characteristics, infrastructure, and technology dimensions, from the nursing students' perspective. The results of the present study showed that, regarding the item of learners' characteristics, more than half of nursing students agree/strongly agree with the " lack of interaction with my colleagues through using e-learning platform ". As well as e-learning challenges items regarding infrastructure, and technology dimensions, the highest percentage of nursing students disagree/strongly disagree with "The E-learning system design is not flexible and difficult to use " and disagree/strongly disagree with "The rules and directions of e-learning platform are difficult for me."

These findings were supported by the study done by **Salloum et al., (2019)** who found that the ease and user-friendliness of e-learning systems will influence students' acceptance and willingness to use them and the same context, the finding was alignment with **Mtebe & Raphael, (2018)** who stated that instruction quality has been discovered to have a considerable beneficial effect on learners' satisfaction with an e-learning system. In addition, this finding agreed with the study done by **Alshehri et al., (2019)** who showed that easing conditions in terms of the availability of hardware, software resources internet connection, and technical support significantly influence the behavioral intention to use the learning management system.

This also was congruent with the study done by **Ahmed et al., (2018)** who found that the most critical success factors that may enhance the sustainability and performance in e-learning are organizational infrastructure readiness, efficient technology infrastructure, appropriate e-learning course design, course flexibility, understandable relevant content,

stakeholders' training, security, access control and privileges, commitment and being user-friendly and well-organized.

Meanwhile, this finding is not by the study performed by **Ali, et al., (2018)** who reported that one of the main barriers to the use of e-learning is technical difficulties, such as a lack of technical support, inadequate and out-of-date computer systems, and connectivity problems.

Regarding the percentage of challenges faced by nursing students during E-learning. It has been seen that during E-learning, most fourth-year academic nursing students reported no challenges, while more than half of second-year academic nursing students reported the same. This might be because the second-year students have little experience in the using internet during their school years before, but the fourth-year academic students might have used e-learning in teaching from previous years in their faculty and became more familiar with the technology during their education. This finding was supported by the study done by **Martha et al., (2021)** who discovered that second year and third-year students need further e-learning training, while fourth-year students are more capable of adapting to e-learning components and challenges. In the disagreement line findings, the study conducted in Saudi Arabia by **Bassam & Alshorman, (2018)** who indicated that younger students had more access and interaction than older students

Regarding the relation between the academic years, overall Perception, and challenges toward E-learning as reported by nursing students, this finding shows the mean score of overall Perception toward E-learning of fourth-year nursing students is higher than the mean score of second-year nursing students. While the mean score of challenges toward E-learning reported by second-year nursing students is higher than the mean score of fourth-year nursing students. There was a statistically significant difference between the student's academic years and their overall Perception and challenges toward E-learning as reported by nursing students. From the researchers' point of view, this may be due to the fourth academic year nursing students having earlier experience with e-learning in courses and the adoption of

using e-learning platforms and repetitive use which cause decreased challenges, so their perception is higher than students the second academic year.

This finding was in agreement with a study conducted in the United Arab Emirates by **Malkawi et al.,(2021)** who and reported that students in the fourth academic year had higher perception than younger students. Another study in the same line was conducted in Australia by **Bouilheres et al., (2020)** who concluded that there was a significant between experience in e-learning and perception. The experience with the internet affects learners' perception.

However, in disagreement with these findings, the study was conducted in Egypt by **Syan et al., (2021)** who revealed that there was no significant between students' age, academic year, and perception of e-learning and agreement with this study's finding conducted by **Uyar, (2023)** who revealed that older students had more satisfaction and perception with minimal challenges faced when using the e-learning platform than younger students.

In the light of correlation between overall perception and challenges toward e-learning. The present study showed that positive statistical correlation between overall perception and challenges toward E-learning as reported by nursing students. From the research point of view, this may be due to students' understanding of challenges faced during e-learning back to support from faculty through continuous training on the learning management system so, students had a positive perception about e-learning and dealing with challenges facing. In agreement with this study's finding conducted by **Fülöp et al., (2023)** whose indicated that positive relation between perception and challenges toward E-learning.

The nursing students' responses regarding recommended ways to overcome challenges towards E-Learning include (1) Improving the skills and abilities of students and fostering better interaction among them while using the e-learning platform and (2) Improving the system and supplying top-of-the-line facilities and resources to guarantee a smooth and hassle-free E-learning. This might be because students believe that e-learning can

help them improve their academic skills, and the availability of distance education is a crucial element affecting their general perception and release of challenges toward e-learning. These findings are in line with the themes that emerged from **Khalil et al., (2020)** whose recommendations were training, teaching, assessment, and quality monitoring and other recommendations were offered by students to improve the students' learning experience, such as building up online learning instructions that included attendance, interaction, and assessment tools.

A similar finding was consistent with **Al-Samarraie et al., (2018)** who mentioned that constructive developments in the internet and electronic platforms have removed time, distance, and space barriers and have formed a lot of free time in learning and teaching activities and these are essential changes in the learning environment. This view was also supported by **Bradbury (2016)** who mentioned that persistent training and orientation events are highly suggested to increase students' online learning skills and tools. Also, another important recommendation said that using a desk computer instead of a phone allows pupils to focus better and be less distracted by incoming calls (**Al-Fraihat, et al.,**). Moreover, these results match with a study conducted by **Ali et al., (2018)** who showed most of them found e-learning more useful to develop the interest of students in online classes, 'institutes must focus on providing guidance regarding initial instructions, proper time frame, technical assistance, interactive sessions, and motivation among the students.

Additionally, these findings are agreement with **Muir et al., 2020 and Morawo et al., (2020)** who recommended that active interaction between students during lectures occurred, and involvement of students increased creating a more active learning environment and improving students' perception of e-learning. Meanwhile, this result was contradicted by (**Morcillo, LealCosta, Moral-García, and Martínez, 2020**) who added that one of the obstacles at the onset of the shift to online learning was a lack of ability in using software platforms and training on using virtual class learning. While these results agree with a study conducted by **Peytcheva et al., (2018)** who

concluded that addressing and overcoming the obstacles faced by nursing students during applying e-learning platforms and improving e-learning will affect the learners' perception and attitude towards e-learning and will encourage them to use the internet in their education and communicate with their teachers and colleagues.

**Finally**, these results agreed with the study done by **Pourtavakoli et al., (2021)** who said that about learners, some crucial factors affect learners' satisfaction such as the learners' attitude toward the computer, the learners' anxiety about the computer, and the learners' self-efficacy. About the instructor, factors such as their attitude towards e-learning and the amount of response to learners; about the educational materials, flexibility 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.

### **Conclusion:**

Accordingly, the results of the present study, it has been concluded that the highest percentage of nursing students perceive E-learning's benefits as accommodating different learning styles, ease and quick sharing of educational material, and access to study resources effectively and updated learning material.

The highest percentage of nursing students perceive that attending online classes increases students' independence and skills in using media, in addition to improving students' media/platform skills, also online learning can enhance the learning experience with various platforms/media. Also, it was concluded that the highest mean score toward total perception was for the second academic year. Also, most second and fourth academic years nursing students had positive Perception of E-learning. Meanwhile, there was not a certain challenge as reported by most and more than half fourth and second nursing students, respectively.

Certain challenges faced by nursing students during E-learning, most fourth-year academic nursing students reported no challenges, while more than half of second-year academic nursing students reported the same. regarding recommended ways to improve the skills and abilities of students using an e-learning platform. Meanwhile, there was a positive statistical correlation between overall Perception and challenges toward E-learning as reported by nursing students.

### Recommendations:

The following recommendations are suggested based on the results of the current study:

- Enhance Internet speed and make Internet packages cheaper or even free.
- Supply e-learning tools and computer skills training for students.
- Enhance educational methods to motivate students to learn and entice them to enroll in online courses.
- Learning through technology demands reliable hardware, easy-to-use software, and great bandwidth network connection.
- Skillfully trained staff that support the users and keep the system.
- Conducted regularly workshops at convenient times for both students and tutors to make the system simple to use for the students and tutors.

### Further studies:

- Address and overcome barriers and later improve the use of E-learning as an essential education tool.
- More research is needed for the investigation of faculty members perception, and the challenges faced by e-learning.

### References:

**Abbasi, S., Ayoob, T., Malik, A., & Memon, S. I. (2020):** Perceptions of students about E-learning during COVID-19 at a private medical college. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4), S57–S61. <https://doi.org/10.12669/pjms.36.COVID19-S4.2766>.

**Abdelrazek, A. & Abdallah, M. (2021):** Effect of Obstacles Faced by Nursing Students related to Applying E-learning during the COVID-19 Pandemic on their Attitudes. *Egyptian Journal of Health Care*, 12(4), 1-16.

**Adnan, M. (2020):** Online learning amid the COVID-19 pandemic: Students perspectives. In *Journal of Pedagogical Sociology and Psychology* (Vol. 1, Issue 2, pp. 45–51): <https://doi.org/10.33902/jpsp.2020261309>

**Ahmed, N., Quadri, N., Qureshi, M and Allam, M. (2018):** "Relationship Modeling of Critical Success Factors for Enhancing Sustainability and Performance in E-Learning. *Sustainability*, vol. 10 no. 12, p. 4776, Dec. 2018.

**Al-Azawei, A., Parslow, P. and Lundqvist, K. (2017):** Barriers and Opportunities of E-Learning Implementation in Iraq: A Case of Public Universities. *International Review of Research in Open and Distributed Learning*. 17 (5): 126-146.

**Al-Balas, M., Al-Balas, I., Jaber, H., Obeidat, K., Al-Balas, H and Aborajoo, E. (2020):** Distance Learning in Clinical Medical Education amid COVID-19 Pandemic in Jordan: Current Situation, Challenges, and Perspectives. *BMC Med Educ*. 2020 Oct 2; 20(1):1–7.

**Al-Fraihat D., Joy, M., Masa'deh, R., and Sinclair J. (2020):** Evaluating E-learning Systems Success: An empirical study. *Computers in Human Behavior*, vol. 102, 67–86. doi: 10.1016/j.chb.2019.08.004.

**Al-Gamdi, M., and Samarji, A. (2016):** Perceived Barriers towards e-learning by Faculty Members at a Recently Established University in Saudi Arabia. *Int. J. Inf. Educ. Technol.*, 6 (1): 23-28. Retrieved from: <https://doi.org/10.7763/IJNET.2016.V6.652>.

**Ali N, Jamil B, Sethi A, Ali S. (2018):** Attitude of nursing students towards e-learning. *Adv Health Prof Educ*. 2(1):24-9.

- Ali, S., Gulliver, S., and Uppal, M. (2018):** A conceptual framework highlighting e-learning implementation barriers. *Info-Tech People*. 31 (1): 156– 180.
- Aljaraideh, Y and Al Bataineh, K, (2019):** Jordanian Students' Barriers to Utilizing Online Learning: A Survey Study. *International Education Studies*, 12 (5): 99-108
- Al-Samarraie, H., Teng, BK., Alzahrani, AI. (2018):** Elearning continuance satisfaction in higher education: a unified perspective from instructors and students. *Studies in Higher Education*, 43 (11): 2003-19.
- Alshehri, A., Rutter, Mand Smith, S. (2019):** An Implementation of the UTAUT Model for Understanding Students' Perceptions of Learning Management Systems: A Study within Tertiary Institutions in Saudi Arabia. *Int. J. Distance Edu. Technol.*, vol. 17, no. 3, pp. 1–24.
- Assareh, A., and Bidokht, M. H. (2011):** Barriers to e-teaching and e-learning. *Procedia Computer Science*, 3, 791-795. <https://doi.org/10.1016/j.procs.2010.12.129>
- Ayed, M., Mohamed, A., Amin, M., Ibrahim, E., Rashed, N., Ali, S., & El Zahra Kamal, F. (2022):** Perception, Satisfaction, and Obstacle of Online Learning Faced by Academic Nursing Students during COVID-19 Pandemic. *Egyptian Journal of Health Care*, 13(1), 1-14.
- Bassam, A., & Alshorman, A. (2018):** Attitudes of Faculty Members and Students towards the Use of the Learning Management System in Teaching and Learning. 17(3), 1–15.
- Bhuasiri, W., Xaymoungkhoun, O, Rho, J. and Ciganek, P. (2012):** Critical success factors for e-learning in developing countries: A comparative analysis between ICT experts and faculty. *Computers and Education*, 58 (2): 843-855.
- Bouilheres, F., Le, L. T. V. H., McDonald, S., Nkhoma, C., & Jandug-Montera, L. (2020):** Defining student learning experience through blended learning. *Education and Information Technologies*, 25(4), 3049–3069. <https://doi.org/10.1007/s10639-020-10100-y>
- Bradbury, N.A. (2016):** Attention span during lectures: 8 seconds, 10 minutes, or more? *Adv Physiol Educ.*; 40(4):509-513. doi 10.1152/advan.00109.
- Dhawan, S. (2020):** Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 49, 5-22. <https://journals.sagepub.com/doi/pdf/10.1177/0047239520934018>.<https://doi.org/10.1177/0047239520934018>.
- Diab., G. and Elgahsh., N. (2020):** E-learning During COVID-19 Pandemic: Obstacles Faced Nursing Students and Its Effect on Their Attitudes While Applying It. *American Journal of Nursing Science*. 9(4):295
- Dibya, S., Ramchandra, K.& Sakun, S. (2022):** E-Learning During Covid-19 Pandemic: Attitude and Problems Faced by The Nursing Students, January 2022, *Journal of Chitwan Medical College* 11(4):93-97, DOI:10.54530/jcmc.559.
- El-Sabagh, H. A. (2021):** Adaptive e-learning environment based on learning styles and its impact on the development of students' engagement. *International Journal of Educational Technology in Higher Education*, 18(1): <https://doi.org/10.1186/s41239-021-00289-4>
- Fülöp, M. T., Breaz, T. O., Topor, I. D., Ionescu, C. A., & Dragolea, L. L. (2023):** Challenges and perceptions of e-learning for educational sustainability in the “new normality era.” *Frontiers in Psychology*, 14(January), 1–14. <https://doi.org/10.3389/fpsyg.2023.1104633>
- Gaur, R., Mudgal, S., Kaur, S and Sharma, R. (2020):** Undergraduate Nursing Students' Attitude towards Online Classes during Lockdown Period in India: Imposed or

- Interested? India. *International Journal of Community Medicine and Public Health*. 2020Sep;7(9):3371-3377. Available at: <http://www.ijcmph.com>
- 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), 252–261. <https://doi.org/10.34190/ejel.19.4.2350>
- Khalil, R., Mansour, A.E., Fadda, W. A., Almisnid, K., Aldamegh, M., Al-Nafeesah, A., Alkhalifah, A., & Al-Wutayd, O. (2020):** The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: a qualitative study exploring medical students' perspectives. *BMC Medical Education* Available at <https://doi.org/10.1186/s12909-020-02208-z>.
- Koirala, D., Silwal, M., Gurung, S., Bhattarai, M., & KC, V. K. (2020):** Perception towards online classes during COVID-19 among nursing students at a medical college of Kaski District, Nepal. *Journal of Biomedical Research & Environmental Sciences*, 1(6), 249-255.
- Lawn, S., Zhi, X., & Morello, A. (2017):** An integrative review of e-learning in the delivery of self-management support training for health professionals. *BMC Medical Education*, 17, 183.
- Malkawi, E., Bawaneh, A. K., & Bawa'aneh, M. S. (2021):** Campus off, education on: Uaeu students' satisfaction and attitudes towards e-learning and virtual classes during covid-19 pandemic. *Contemporary Educational Technology*, 13(1), 1–14. <https://doi.org/10.30935/cedtech/8708>.
- Martha, A., Junus, K., Santoso, H and Suhartanto, H. (2021):** Assessing Undergraduate Students' E-Learning Competencies: A Case Study of Higher Education Context in Indonesia. *Educ. Sci.* 2021, 11, 189.
- Morawo A, Sun C, Lowden M (2020)** Enhancing engagement during live virtual learning using interactive quizzes. *Med Educ* 54(12): 1188.
- Morcillo, A. R., Leal-Costa, C., Moral-García, J.E., & -Martínez, M.R. (2020):** Experiences of Nursing Students during the Abrupt Change from Face-to-Face to e-Learning Education during the First Month of Confinement Due to COVID-19 in Spain. *International journal of environmental research. Public Health* 2020, 17, 5519; doi: 10.3390 /ijerph17155519.
- Mtebe, S and Raphael, C. (2018):** Key Factors in Learners' Satisfaction with the E-Learning System at the University of Dar es Salaam, Tanzania. *Australasian Journal of Educational Technology*, 34 (4): 107-122.
- Muir S, Tirlea L, Elphinstone B, Huynh M (2020)** Promoting classroom engagement using an online student response system: a mixed methods analysis. *J Statist Educ* 28(1): 25-31.
- Odit-Dookhan, K. (2018):** Attitude Towards E-Learning: The Case of Mauritian Students in Public Teis. *PEOPLE: International Journal of Social Sciences*, 4(3), 628–643. <https://doi.org/10.20319/pijss.2018.43.628643>
- Osman M, Wahid A and Zakria A, (2018):** Assessment of Factors Affecting E-learning: Preliminary Investigation. 1st International Conference on Open Library to Open SocietyAt: Sukhotai Thammatirat Open University, Nonthaburi, Thailand.
- Ostin., LO. and Wiley., LF. (2020):** Governmental public health powers during the COVID-19 pandemic: stay-at-home orders, business closures, travel restrictions. *JAMA*.
- Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Ratri, P. Rosner, R. and Sindhi, S. (2018):** Online education: Worldwide status, challenges, trends, and implications. *Journal of Global Information Technology Management*, 21 (4): 233-

241. <https://doi.org/10.1080/1097198X.2018.1542262>.
- Peytcheva-Forsyth, R., Yovkova, B., and Aleksieva, L. (2018):** Factors affecting students' attitudes towards online learning -The case of Sofia University. <https://doi.org/10.1063/1.5082043>.
- Pourtavakoli, A., Alinejad, Mand Daneshmand, B. (2021):** Designing a pattern for E-Content Development Based on The Factors Affecting Satisfaction in E-Learning" *Tech. Edu. J.* 2021; 15: 119-138.
- Radha, R. (2020):** Swami Vivekananda's Mission on Man-Making Education, *International Journal of Emerging Technologies, and Innovative Research*.
- Salloum, A., Al-Emran, M., Shaalan, K and Tarhini, A. (2019):** "Factors Affecting The E-Learning Acceptance: A Case Study from UAE". *Education and Information Technologies*, 24 (1): 509-530.
- Saravanakumar, A., Parashar, N., Sahana, S., Baskaran, D., & Sundaram, K. (2022):** Perception of Learning Management System Among Distance Learners in India. *Journal of Positive School Psychology*, 2022(2), 3738–3748. <http://journalppw.com>
- Syan, S, A., El swanky, F, M., Elshafie, W, H, K., Salama, N, S, S., Ayed, M, M, A., Abdelfatah, B, M, Y., & El-Ghadban, F, E. (2021):** Effect of Blended Learning and Social Media Learning on the Academic Success and Motivation among Undergraduate Nursing Students. *Egyptian Journal of Health Care*, 12(2), 1774–1786. <https://doi.org/10.21608/ejhc.2021.238109>.
- Uyar, A. (2023):** Exploring the students' attitudes towards e-learning at territory level: a focus on Türkiye. *International Journal of Curriculum and Instruction*, 15(2), 1327–1353. <https://ijci.globets.org/index.php/IJCI/article/view/1294>.
- World Health Organization. (2020):** Statement on the meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV): Retrieved on 27 April 2020 from <https://bit.ly/2RwodiW>.
- Zhang, YU. (2020):** COVID-19 crisis is an opportunity to try out online HE. 14 March 2020 Retrieved from: <https://www.universityworldnews.com/post.php?story=2020031013551895>.