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Original Article

Factors Affecting the Use of Electronic Learning Platforms as Perceived by Nursing Students and its Relation to their Engagement

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ABSTRACT

Background: In the educational sector, electronic learning platforms have become more popular during the COVID-19 pandemic. However, a variety of factors that nursing students deal with have an impact on their engagement**. Aim:** The study aimed to assess factors affecting the use of electronic learning platforms as perceived by nursing students and its relation to their engagement. **Research design:** A descriptive-correlational design was utilized. **Setting:** This study was conducted at the Faculty of Nursing, Benha University. **Subjects**: A stratified random sample consisted of 1084 nursing students from four academic levels in the academic year 2022/2023. **Tools of data collection:** Two instruments were employed to gather data. 1) Factors affecting the use of e-learning platform questionnaire and 2) students' engagement questionnaire**. Results:** The results showed that the highest factor affecting using of electronic learning platform was related to environmental factors. While the lowest factors affecting using of electronic learning platform was related awareness about electronic learning platform and more than half (53.9%) of nursing students were moderately engaged in nursing education. While more than one quarter of them (27.6%) were low engaged in nursing education. **Conclusion**: There was a highly statistically significant positive correlations between factors affecting using of electronic learning platforms among nursing students and their engagement. **Recommendations:** Creating training programs for nursing students to improve the efficiency of using the platforms. And creating online course materials using various elements of the electronic learning platforms to enhance student' engagement with nursing education.

Keywords: Electronic learning platforms, Engagement, Nursing students.

Introduction

Higher education institutions still faced numerous difficulties, even when the COVID-19 vaccine became available. The difficulty calls for a significant overhaul of the teaching and learning processes. Since there was no other way to carry out the teaching methodologies and objectives during the epidemic, the majority of schools and colleges shifted to virtual classrooms and e-learning platforms. Students at universities are now in an entirely new atmosphere where they must overcome various difficulties. Zoom, Microsoft Teams, Moodle, Google Classroom, and virtual reality applications are some of the several

educational e-learning platforms **(Jimenez et al., 2021).**

Electronic learning (E-learning) is defined as the delivery of educational content (electronic) through media based on the computer and its networks to the recipient in a way that enables active interaction with this content and features and with peers only simultaneously or not synchronized, as well as the possibility of completing this learning in a location and at a pace that suits the circumstances and abilities of both learners and educators **(Gorbunova & Kalimullin, 2017).**

Additionally, e-learning allows for continuous access to the curriculum; this feature puts the student in a stable condition by enabling them to obtain the information they need at a time that works for them. The feeling of equality is yet another advantage; since, students can convey their opinions and voices through accessible communication channels, everyone has the chance to express their opinions whenever they want without feeling embarrassed. E-learning has made it much simpler to find and contact the teacher as quickly as possible outside of regular working hours (**Dhillon & Murray, 2021).**

An electronic learning platform (E-learning platform) is a computing system that assembles various tools and provides instructional channels. Software that facilitates the delivery of distance learning is known as an e-learning platform. This sort of software combines the features required for the three major users of a device: teacher, student, and administrator, with the goal of enabling remote consultation of educational materials, individualized instruction, and teletutoring **(Ly et al., 2021)**.

There are countless factors that affect the use of e-learning platforms, and these variables change depending on location, users' perceptions, organization structure, and self-efficacy of the users. The adoption of e-learning systems is actually hampered by a number of issues, according to a number of experts **(Almaiah & Alyoussef, 2019).** The use and efficacy of E-learning platform systems are influenced by a number of factors, including user accessibility of technology, platform system quality and infrastructure, and environmental factors. These factors were examined in relation to their impact on the educational process. Additionally, the efficiency of e-learning is impacted by user training and technical adoption **(Azeta et al., 2017).**

Accessibility of technology; to maintain academic activities, governments around the world have made it official to move face-to-face instruction online **(Abidah et al., 2020).** Technology is a must for nursing educators who want to teach their students remotely. Nursing educators must respond quickly to the situation and look for a platform that will enable them to teach online. It becomes an issue when teachers admit that not every student has access to technology. **(Abubakar & Tsuraya, 2021).**

Platform quality System is a necessary element for achieving the specific goals that organizations have set. System quality is a measure

of how well an information system in an educational setting possesses its desired features. Platforms service quality in the context of e-learning refers to the quality of assistance that the department provides to users utilizing its platforms or in the e-learning environment. The success of an e-learning platform system depends on the quality of the service that is provided via the platform system, which will interface with students. **(Al Mulhem, 2020).**

Environmental factors (Facilitating conditions) which may be defined as the degree to which an nursing educators and students believes that an organizational and technical infrastructure exists to support the use of the system. Facilitating conditions are basically the factors in the environment that influence a students and educator's desire to perform a task which includes technical support, skills training, and access to information or resources. Facilitating conditions can directly predict and influence the actual usage of computers and systems **(Marlina et al., 2021).**

Awareness of e-learning platforms; a critical examination of nursing educators' and students' characteristics must be done to ascertain whether they are aware of e-learning platforms and whether they are actively using them to improve their academic work **(Nyagorme et al., 2017).** Compared to students with converging and diverging learning styles, those with accommodating and assimilating learning styles had notably higher positive attitudes and awareness towards many aspects of network-based training. The way nursing students feel about technology has an immediate impact on their behavior, which in turn affects how they utilize it, regardless of how refined the technology is. **(Al Adwan et al., 2018).**

The significance of having the necessary information and communication technology (ICT) resources and infrastructure available when integrating ICTs into teaching methods. However, while required, the presence of suitable ICT infrastructures and resources is not sufficient in and of itself to ensure that ICT is used effectively in education **(Ly et al., 2021)**. No matter how high the quality of these ICT resources may be inside a given institution, access to ICT resources for both professors and students is not always guaranteed. On the other hand, inadequate ICT resource management and a lack of external access to the faculty/educational institution network may prevent professors and students from using ICTs. Additionally, there are times when teachers must reserve a spot in the ICT classroom much in advance **(Rasmitadila et al., 2020).**

The term student's engagement refers to any ongoing relationship a learner has with any area of education, schools, or learning. The success of classroom instruction and institutional greatness are both increasingly recognized as being correlated with student involvement. It serves as a benchmark for ongoing evaluation of the effectiveness of the nursing program and the graduation success of students **(Norton et al., 2019).**

Additionally, "student' engagement in academic activities" refers to a student's capacity

for time management, preparation for and participation in classroom activities, interaction with the teaching staff and other students, and completion of academic tasks. Also, student's engagement is "how engaged or interested they seem to be in their learning and how connected they are to their classes, their institutions, and each other" **(Parsons et al., 2018).**

There are five indicators of students' engagement. The first indicator is active and collaborative learning, which comprises involving other students in the educational process. Student effort is the second indicator; it refers to the time and effort students put forth to complete formal academic requirements **(McDonald et al., 2020)**. Academic challenge is the third indicator; students collaborate with professors on tasks outside of school that can deepen their understanding of subject matter. The fourth indicator is student-faculty contact, which is one of the most crucial aspects of college student learning, engagement, and satisfaction. Support for learners is the fifth indicator, and students will feel safe engaging in learning if they believe that professors and the college are supporting them **(Hayashi, 2019).**

The usability of educational technology, such as e-learning platforms, is crucial for bridging the technological divide between educators and students. It is an essential quality for user acceptability and the subsequent spread of the technology. The effectiveness of learning and the entire learning experience are significantly impacted by the usability of e-learning platform systems. Due to the pandemic issue, the switch from traditional to online teaching, and its impact on students' engagement with online learning, there is a need to investigate these factors and take them into consideration when making educational decisions **(Mastan et al., 2022)..**

Significant of study:

Worldwide education has been impacted by COVID-19. Colleges and schools are still closed. Therefore, the development of e-learning platforms is taking place in the educational system. Online learning facilitates teaching and learning during the epidemic, but for an e-learning system to be successful, it must be implemented in an organized and structured manner. In the epidemic period, e-learning platforms have already undergone a significant transition to e-learning in the pandemic period **(Murphy, 2020).**

Engagement level among nursing students is important. It promotes academic progress and reduces school dropout rates. College students' levels of involvement and effort are indicated by a variety of attitudes and behaviors, collectively referred to as engagement. Students who are actively involved look out for and partake in the activities that will help them succeed in their academic endeavors. Their engagement activities have an impact on their continuous retention in the nursing profession as well as their interactions with patients during clinical care **(Fatou & Kubiszewski, 2018)**. So, the present study was conducted to assess factors affecting the use of electronic learning platforms as perceived by nursing students and its relation to their engagement.

Aim of the study:

This study aimed to assess factors affecting the use of electronic learning platform as perceived by nursing students and its relation to their engagement.

Research questions

1. What are the factors affecting the use of e-learning platform as perceived by nursing students?
2. What are the levels of nursing students' engagement in nursing education?

What is the relation between factors affecting the use of e-learning platforms and nursing students' engagement in nursing education?

Subjects and method:

Research design:

The current study was conducted using a descriptive correlational design.

Study setting:

The current study was conducted at the Faculty of Nursing, Benha University. There are six academic nursing departments, including medical - surgical, pediatric, obstetrics and gynecological, community health, nursing administration, and psychiatric nursing mental health. The National Authority for Quality Assurance and Accreditation of Education (NAQAAE) first accredited the faculty on August 25, 2014, and on October 27, 2021, it was accredited once again.

Study subjects:

The study's subjects consisted of 1084 nursing students randomly selected from the four academic levels at academic year (2022/2023) who were selected using stratified random sampling. From each stratum (academic level) had a sample size determined using the following formula.

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n → The required number of subjects

N → Total number of nursing students in each academic level

e → Error tolerance (0.05)

1→ A constant value. (**Tejada and Punzalan, 2012).**

Distributed as follow:

Academic level	Total number (N)	Sample size (n)
1st	629	245
2nd	1019	287
3rd	1221	301
4th	674	251
Total	3543	1084

Tools for Data Collection: Two instruments were employed to gather data.

Instrument 1: Factors Affecting the Use of E-learning Platforms Questionnaire

A structured questionnaire was constructed by the researchers based on review of literature **(Sun et al., 2008; Nyagorme et al., 2017; Cacheiro-Gonzalez et al., 2019; Opeyemi et al., 2019; Chen et al., 2020 and Victoria et al.,2020)**. For assessing how nursing students perceive the factors

affecting their use of e-learning platforms. It was divided into three sections:

Section 1: Personal data of nursing students: It consisted of personal characteristics about nursing students; (age, gender, residence, marital status, academic level).

Section 2: Nursing students' experience with technology consisted of 8 questions.

Section 3: **Factors affecting using of e-learning platforms as perceived by nursing students:** It consisted of 50 items grouped under 4 main factors distributed as follows; 1) accessibility of technology (7 items), 2) platform system quality (10 items), 3) environmental factors (10 items), and 4) Awareness about electronic learning platform (23 items).

Scoring system:

The responses of nursing students were rated using a Likert scale with three points: (1) disagree and (3) agree. A factor's mean score was obtained by summed up all of the factor's scores and dividing the total by the number of items. The mean percent of the total scores for each factor was then used to rank the factors.

Instrument 2:Students' Engagement Questionnaire:

It was developed by researchers guided by **(Arndt, 2014; Hudson, 2016; Elhehe, 2017; Community College Survey of Student Engagement, 2018)**. It was used to assess the levels of nursing students' engagement in nursing education. It was composed of 32 items, categorized into five dimensions; 1) active and collaborative learning (6 items), 2) academic challenge (6 items), 3) students' effort (8 items), 4) students' faculty interaction (6 items), 5) support for learners (6 items).

Scoring system:

The responses of nursing students were rated using a Likert scale with three points; (1) never, to (3) always. Total scores ranged from (32- 96). The nursing students who had a percent more than 75% of total engagement scores equal (73-96) this indicated high level engagement in nursing education, if the score was between 60%-75% of total engagement scores equal (58-72) this indicated moderate level engagement in nursing education, and if the score was less than 60% of total scores equal (32-57) this indicated low level engagement in nursing education.

Validity of tools:

A panel of five experts, four from different nursing faculties (a professor from Tanta University, a professor from Menoufia University, an assistant professor from Cairo University, an assistant professor from Benha University with a focus on nursing administration, and the director of the Benha University E-learning platform), assessed the face and content validity of the study tools. Expert opinions served as the basis for the revisions. For example, adding a few things (like what programme is used to provide lectures on e-learning platforms and whether chat rooms and forums are available to enhance the educational process), removing items that has the same meaning, and changing a few words to clarify something that was unclear.

Reliability of tools: The Cronbach's Alpha test was performed to assess the tools' reliability in order to ascertain their homogeneity and internal consistency. The Factors Affecting the Use of E-

learning Platform Questionnaire had an internal consistency of 0.940 and the Students' Engagement Questionnaire had an internal consistency of 0.964.

Ethical Considerations:

The scientific research ethics committee of Benha University's Faculty of Nursing provided ethical approval for the study before it was carried out, citing code number REC-NA-P13. Every participant in the study was fully aware that their participation was entirely voluntary, and their agreement to complete online surveys constituted their informal consent. The code numbers attached to the questionnaire sheets served as a safeguard for the confidentiality of the information collected. The study tools' contents were disclosed to the subjects, who were told that they would only be utilized for research. The freedom of participants to leave the study at any moment was granted.

Pilot study:

In mid-March 2022, a pilot research including 10% of the total study subjects was conducted to determine the suitability and comprehensibility of the study instruments. The pilot study comprised 101 nursing students from four different academic levels. Additionally, it has been useful in estimating the amount of time needed to complete the questionnaires. The Factors Affecting the Use of E-Learning Platform Questionnaire took 15-20 minutes, while the Students' Engagement Questionnaire took 10-15 minutes. The sample from the pilot study was included in the main subjects of the study because no modifications were required.

Field work:

It took approximately two months from April to May 2022 to collect the data. The heads of various academic departments gave the researchers permission to prepare the questionnaires electronically using Google Form Design, and they also explained the purpose and methodology of the study to the students in their departments. After that, the heads of various academic departments sent the links to the nursing students via WhatsApp groups. Here is the link to the questionnaires: https://forms.gle/iRc6WqXuomsqVFHV7. Nursing students began to click on the links and complete the questionnaires.

Statistical analysis:

Before being entered into the computer, the data were verified. Version 21.0 of the Statistical Package for Social Sciences (SPSS) was employed. Frequency, percentages, mean and standard deviation, and other descriptive statistics were used. Certain variables were tested for significance using an independent t-test. To evaluate the relationship between variables, linear regression is utilized. P-values of less than 0.05 indicated statistical significance, p-values of less than 0.001 indicated highly statistical significance, and $P > 0.05$ indicated insignificance.

Results

Table 1 shows that less than two thirds (64.9%) of studied nursing students had ≤ 20 years with $\bar{X} \pm SD$ (19.49±1.15) years. About three quarters (74.2% & 76.9%) of them were females and from rural areas. Majority of them (98.3%) were unmarried. More than one quarter (27.8% & 26.5) of them were at third and second academic level.

Table (2): Shows that more than half **(**51.6% & 66.2%) of nursing students had a computer or laptop and had advanced mobile respectively.

82.1% of them attended a previous computer course. As far as their internet experience more than half of them (54.1%) of them were competent in using internet. Finally, majority of them (90.4% & 91.5%) attend courses designed by the information technology unit regarding the use of the E-learning platform and use e-learning platform through mobile phone, respectively.

Table (3): Shows that the highest factor affecting using of e-learning platform was environmental factors with $\bar{X}$ ± SD (24.46 ± 4.21) that represent (81.5%) of total scores. While the lowest factor affecting using of e-learning platform was awareness about e-learning platform with $\bar{X}$ ± SD (46.07 ±9.35) that represent (66.8%) of total scores.

Figure (1): Displays that more than half (53.9%) of nursing students were moderately engaged in nursing education. While more than one quarter of them (27.6%) were low engaged in nursing education**.**

Table (4): Shows that total mean and standard deviation of nursing students' engagement in nursing education was (58.27±19.91) that represent (60.7%) of total scores. The highest dimension of nursing students' engagement in nursing education was student faculty interaction with $\bar{X}$ ± SD (12.41±4.18) that represent (68.9%) of total scores. While the lowest dimension was support for learners with $\bar{X}$ ± SD (9.05±4.05) that represent (50.3%) of total scores.

Table (5): Shows that there was a highly statistically significant positive correlation between factors affecting the use of electronic learning platform among nursing students regarding their engagement in nursing education**.**

Table (1): Frequency and distribution of personal data of nursing students (n=1084)

Personal data	No	%
Age		
≤ 20 years	704	64.9
20+ years	380	35.1
Range	**18-22**	
X ± SD	**19.49±1.15**	
Gender		
Male	280	25.8
Female	804	74.2
Residence		
Rural	834	76.9
Urban	250	23.1
Marital status		
Married	16	1.7
Unmarried	1066	98.3
Academic level		
First	245	22.5
Second	287	26.5
Third	301	27.8
Fourth	251	23.2

Table (2): Frequency and distribution of nursing students' experience with technology (n=1084)

Items	No	%
Have a computer or laptop		
Yes	559	51.6
No	525	48.4
Phone type		
Simple	366	33.8
Advanced	718	66.2
Attend a previous computer course		
Yes	889	82.1
No	195	17.9
Use Microsoft office programs		
Yes	704	64.9
No	380	35.1
Internet experience		
Novice	323	29.8
Competent	586	54.1
Expert	175	16.1
Attend courses designed by the information technology unit regarding the use of the E-learning platform.		
Yes	980	90.4
No	104	9.6
Use E-learning platform through:-		
Mobile phone	992	91.5
Computer / laptop	92	8.5

Table (3): Ranking and mean scores and mean percent of total scores of factors affecting the use of E-learning platform among nursing students (n=1084)

Factors affecting the use of E-learning platform	Max Score	$\bar{X}$ ± SD	$\bar{X}$%	Ranking
Accessibility of technology	21	17.09 ± 3.82	81.3	2
Platform system quality	30	20.90 ± 5.16	69.7	3
Environmental factors	30	24.46 ± 4.21	81.5	1
Awareness about E-learning platform	69	46.07 ±9.35	66.8	4

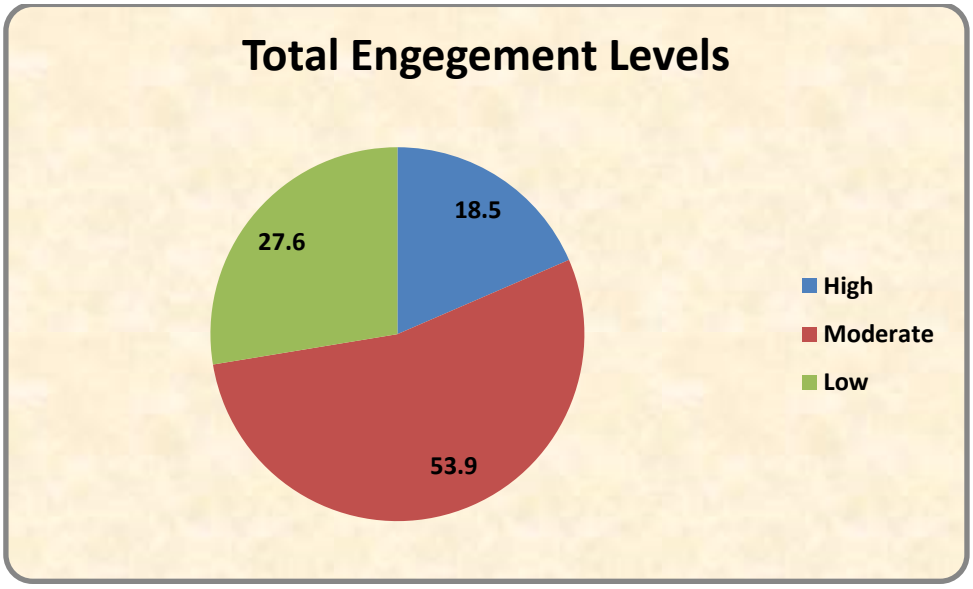

Figure (1): Total engagement in nursing education levels as reported by nursing students

Table (4): Ranking and mean scores and mean percent of total scores of nursing students' engagement in nursing education.

Engagement in nursing education	Max score	X ± SD	X%	Ranking
Active and collaborative learning	18	11.98±3.57	66.6	2
Academic challenge	18	10.73±3.46	59.7	3
Students effort	24	14.10±4.65	58.8	4
Student faculty interaction	18	12.41±4.18	68.9	1
Support for learners	18	9.05±4.05	50.3	5
Total Engagement	**96**	**٥٨,٢٧±19.91**	**60.7**	

Table (5): Liner regression of factors affecting the use of electronic learning platform among nursing students regarding their engagement

Predictor variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.602	2.318		3.479	0.001**
Total awareness about E-learning platform using	0.841	0.034	0.429	10.906	0.000**
Total accessibility of technology	1.045	0.213	0.186	6.080	0.000**
Total platform system quality	1.656	0.145	0.439	13.297	0.000**
Total environmental factors	0.830	0.154	0.172	7.186	0.000**

Anova F (56.880), R Square (0.087), ** highly statistically significant difference (P ≤ 0.001)

Discussion

The electronic learning platform's flexibility in nursing education enables students to carry on with their teaching and learning throughout COVID-19. However, a number of significant elements, such as system quality, perceived utility, perceived simplicity of use, training, and system interactivity, which impact student engagement in education, influence nursing students' desire to

utilize e-learning platforms. **(Ramadhan et al., 2021).**

Students' engagement is the amount of physical and psychological energy that students devote to the academic experience. It is defined as a spectrum of attitudes and actions that show how involved and hard-working pupils are with their teachers. Students who are actively involved in their studies look for and take part in activities that help them succeed in their studies. Students who are engaged in their studies put in a lot of time and energy, are committed to their studies, and are frequently engrossed in their coursework. When study activities are consistently prioritized, motivated students become more goal-oriented and are more likely to learn well (**Attard & Holmes, 2020).**

The present study aimed to assess factors affecting the use of electronic learning platforms as perceived by nursing students and its relation to their engagement.

Concerning the nursing students' technology experience, the current study revealed that more than half of nursing students had a computer or laptop. This may be due to that the technological equipment in fact has become popular and has many benefits for use today, therefore many families were encouraged to buy it. This result was aligned with **Nyagorme, et al., (2017)** who found that more than half of the nursing students reported that they own a computer.

Concerning phone type, the results of the present study revealed that the majority of nursing students had an advanced mobile phone. This may be the result of technological developments and the unavoidable requirement for mobile phone in electronic learning to handle novel learning environments and maintain communication with faculty and students via mobile apps like Microsoft Teams and WhatsApp. This result was harmonized with **Almuwais et al., (2021)** who founded that the majority of students informed that they owned advanced electronic devices.

The results of the current study indicated that the majority of nursing students attended previous training courses about using computers. This might be due to the new learning method in which the use of computers is very important and the faculty is making workshops and training courses about how to use computers given by information technology unit team members in the faculty. This result was in agreement with **Valizadeh et al., (2021)** who stated that the majority of nursing students held an International Computer Driving License (ICDL) certificate. This result disagreed with **Mendonça et al., (2021)** who stated that the majority of students didn't take relevant ICT training programs

The current study findings regarding the use of Microsoft Office programs showed that the majority of nursing students use Microsoft office program. This might be because the majority of nursing students completed the ICDL course and are now required to use this program as part of their new learning requirements for creating assignments and presentations. This result was supported by **Agboola, (2019)** who stated that

most of nursing student used Word and PowerPoint programs. This finding was disagreed with **Tania et al., (2022)** who found that the use of smartphones was more dominant among the students and desktops was less common among the students.

Moreover, the results of the present study revealed that the majority of nursing students had competent internet experience. This might be the result of nursing students using the internet to prepare presentations, communicate, and use various social media platforms like Facebook, YouTube, and WhatsApp. This result was supported by **Akakandelwa & M'kulama (2018)** who discovered that most nursing students thought their computer literacy was adequate for succeeding in online learning. Also, this result was in agreement with **Mahmoud et al., (2020)** who found that more than half of nursing students agreed that they have sufficient internet skills to deal with Moodle.

The results of the current study showed that the majority of nursing students received training courses about the use of E-learning platform. This due to the information technology unit in faculty conducted workshops and educational videos for the nursing students for shifting to online learning during Covid-19 outbreak. This result was consistent with **Wozniak, et al., (2021)** who discovered that before changing to a fully online setting, more than two-thirds of students said they had received at least some e-learning training. The result of present study was inconsistent with **Nyagorme et al., (2017)** who report that only less than one fifth of the students had received training on an e-learning platform.

The findings of the present study indicated that the highest factor affecting the use of E-learning platform was environmental factor. While the lowest factor affecting using of E-learning platform was awareness factor. From the researchers point of view, this could be explained as nursing students believed that environmental factors or behavioral physical setting technical and faculty infrastructures strongly affected use of information systems used by nursing educators while giving lectures via e- learning platform and they also perceived that the lowest factor was awareness as information technology unit at the faculty conducted several workshops for students about using E- learning platform –submit-assignment and quiz . Also, information technology unit provides educational videos about how to use electronic platform which facilitate student engagement.

This result was supported by **Zalat et al., (2021)** who found that environmental factors as sufficient/ stable internet connectivity, adequate computer labs and technical support were the highest factors for adapting to e-learning among medical university students. This results in the same line with **Lee et al., (2021)** who found that the environmental factors have an effect on e-learning usage. Moreover **Lashayo & Md Johar (2018)** who found environmental factor had a positive and significant effect on e-learning actual use among medical university student.

The findings of the present study displayed that more than half of nursing students were moderately engaged in nursing education**.** From the researchers point of view, this could be explained as the faculty successfully deploys its educational resources, organizes curriculum and other learning opportunity and provides support services to enhance students participation in educational activities based on their experiences and desired outcome such as learning, satisfaction and graduation. So, they were motivated to team work through practical and theoretical education by working and discussing in groups with peers to enhance their knowledge, skills and understanding of achievement.

The results disagreed with ***Hudson, et al., (2018)*** who reported that the greatest percent of nursing students had a good level of engagement. Also, in line with ***Hudson and Carrasco, (2017)*** and ***Kimbark et al., (2017)*** study, which revealed that the majority of nursing students had a high level of engagement. While, more than one quarter of them were low engaged in nursing education. This study's finding incongruent with ***Sabra, et al., (2018)***, who noted that more than half of nursing students at South Valley University had a low level of students' engagement

The findings of the present study showed that the highest dimension of nursing students' engagement in nursing education was student-faculty interaction, while, the lowest dimension was support for learners. This may be due to faculty discussing ideas they have read with nursing students in and out of class, discussing grades and assignments with teaching staff and receiving timely feedback on performance from teaching staff. These results agreed with **Abd El-Hay, (2020)** who reported that the highest mean scores were related to student faculty interaction. While, support for learners got the lowest mean scores from total mean scores.

The findings of the present study indicate that there was a highly positive statistically significant correlation between factors affecting using of electronic learning platform among nursing students and their engagement. From the researcher's point of view, this could be explained that the trend of using e-learning platform in nursing education is beneficial for student's collaboration and has the potential to increase knowledge and skills as it provides the opportunity to go beyond traditional delivery of information and develop learner-centered environments, which enhance learning experiences, even outside of their classrooms, hence, it fosters students' engagement with learning through engaging in group discussion and connection with peer students and nursing education.

This result disagreed with ***Roopchund, et al., (2019)*** who reported that there was a positive relation between the use of social networking and students' engagement levels. This result disagreed with ***Koranteng et al., (2018)*** and ***Mowafy, (2018)***, who found that there was no significant relation between factors affecting the use of electronic learning platforms and students' engagement.

Conclusion: The result concluded that the highest factor affecting e-learning platforms using among nursing students was related to environmental factors, followed by access to technology, platform system quality, and finally awareness about e-learning platforms. More than half of nursing students were moderately engaged in nursing education. While more than one-quarter of them were poorly engaged in nursing education. Also, there was a highly statistically significant positive correlation between factors affecting the use of electronic learning platforms among nursing students and their engagement.

Recommendations:

- Creating training programs for nursing students to improve the efficiency of using the platforms.
- Creating online course materials using various elements of the electronic learning platforms to enhance student' engagement with nursing education.
- Using modern teaching methods and based on peer teaching, which help students' engagement in nursing education.
- Continuously measure students' satisfaction with using the electronic learning platforms to identify obstacles to use.
- Faculty administration need to ensure the availability of high speed internet connection to advanced computer devices and all technical support for nursing students.

For further research:

- Examine how students' academic motivation and creativity are affected by using e-learning platforms.
- Investigate the factors that hindering e-learning platforms utilization and strategies to overcoming it

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