

## Lecturers' Teaching Competence and Nursing Students' Engagement in the Use of On-Line Learning

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### Abstract

**Background:** Nursing students' engagement is an enhancing strategy that helps them to remain within their education, and consequently the profession. Therefore, it is vital to work further as lecturers in nurturing teaching competence, to improve nursing students' skills to become highly engaged learners. **Aim of the study:** Assess lecturer' teaching competence and nursing students' engagement in the use of on-line learning. **Subjects and Method: Research design:** A descriptive, correlational design was utilized. **Subjects:** The nursing students recruited by proportionate stratified random sampling. This study included 943 nursing students from four academic years. **Tools:** Two tools were used for data collection: Teaching Competence Questionnaire and Nursing students' Engagement Questionnaire. **Results:** More than half of nursing student perceived lecturer' teaching competence as high especially for planning, result, and development, respectively. Also, more than half of them had high level of engagement. **Conclusion:** Lecturer' teaching competence affect nursing students' engagement where there was a statistically highly significant positive correlation between overall lecturers' teaching competence and overall nursing students' engagement. **Recommendation:** Periodic regular educational on-the-job training program needed for lecturers regarding the use of different teaching strategies, evidence-based teaching practices, educational technologies, on-line testing and multiple assessment designs. **Key Words:** Lecturer' Teaching Competence , Nursing Students' Engagement, On-line Learning.

### Introduction

On-line learning thrived rapidly and turned out to be the chief educational method rather than alternatives. It is applied promptly for all categories of students, containing university students<sup>(1)</sup>. Lecturers use synchronous videoconferencing with the learning management system to educate in online learning<sup>(2)</sup>. The instruction and content are provided mainly over the internet<sup>(3)</sup>. On-line learning is an educational system in which students and lecturers are physically separated by the environment but connected with the help of technology, teaching tools, and equipment<sup>(4)</sup>.

On-line learning is come to be an important technique in learning for its talent in providing education with lower expenditure, ease of availability at anytime and anyplace, and for overwhelming many traditional educational difficulties<sup>(5)</sup>. In nursing teaching, the move toward incorporating on-line learning into courses continues. As it increase nursing students' openness to information, enhanced content delivery, adapted instruction, content calibration, answerability, on-demand obtainability, self-pacing, interactivity, self -confidence, and increased accessibility. Moreover, it enlarged nursing students' gratification

and decrease lecturers' workload <sup>(6)</sup>. On-line learning requires nurse lectures develop a comprehensive and structured lectures plan design, technical abilities, teaching materials, timely preparation, and on-line teaching competences <sup>(7)</sup>. Assessing the on-line teaching competence of lecturer is an energetic step to increase the efficiency of teaching and learning in nursing and raising the educational measures <sup>(8, 9)</sup>. The nursing students are the ones who have most frequently been chosen to assess the excellence of lecturer teaching competence <sup>(8)</sup>. On-line teaching competence requires lecturers to have mastered the ability to teach, to transmit knowledge, skills, and attitudes from the lecturers to the student <sup>(10)</sup>. It includes three stages; the first planning stage, lecturers planning refer to all things associated to the preceding procedure of reflection and scheme of subject (the syllabus, the organization of courses, lectures, planning of predicted learning events, assessment standards and approaches, teaching supplies and resources)<sup>(9,10)</sup>. Effective on-line lecturer should recognize the basics of on-line teaching. They must exhibit this recognition through implementing the following principles and strategies including; mastering widespread knowledge of the subject matter, assess students' education need, plan lectures that meet those needs, stating learning goals

and objectives that agree with nursing students' levels, and developing learning and assessment activities that bring into line with those objectives <sup>(11,112)</sup>.

The second stage is development of the course; it encompasses the whole thing correlated to the implementation of and compliance with the syllabus, the teaching and learning actions carried out, estimated academic activities, as well as applied evaluation techniques<sup>(9)</sup>. In this stage on-line lecturer must be able to apply suitable teaching strategies, use student engagement techniques effectively. Moreover, the lecture organize and facilitate nursing students' participation, provide direction and care as required, practice criterion-based assessment to appraise nursing students' activities, motivate students, and promoting group interaction, collaboration, and teamwork <sup>(13-15)</sup>. The third stage is the results; denote the accomplishments make by the students, and the phases involving the review and development of teaching activity, external appreciation of teaching obligations, and formation of teaching supplies. Lecturers have to exhibit the competencies of reflecting and illustration on lessons learned <sup>(9, 11)</sup>.

On-line competent lecturers stimulate and assist nursing students' dynamic communication, collaboration, and engagement during the on-line lectures <sup>(16)</sup>. Student engagement is an indicator for valuation of the quality of the nursing

course and the success of students. Nursing students' engagement is important for success within nursing courses<sup>(17)</sup>. Student's engagement is a positive mood characterized by energy, involvement and efficacy<sup>(18)</sup>. By engaging nursing students at the very core of the delivery of their on-line learning it can also be likely to drive active learning<sup>(19)</sup>. Preserving and nurturing nursing students' engagement in on-line nursing learning stay the significant challenges fronting lecturers<sup>(20)</sup>. In academic learning nursing students' success in the nursing course is linked to their level of engagement<sup>(21)</sup>. Engaged nursing students with their teaching can improving their profession. These students can accompaniment practice and offer novel ideas and well methods of execution practice<sup>(22)</sup>.

Student engagement is important in order to prevent on-line nursing students' separation and failure. It can be an important factor in the holding of on-line students and raise their advancement rates<sup>(23)</sup>. Nursing students frequently engage with lecture content, their colleagues, and their lecturers. Nursing students' engagement, include; skills, emotions, participation, and performance engagement<sup>(24)</sup>. Skill engagement refers to nursing students' exertion to actually understand, learn, and master the knowledge and talents under learning. Also, volitionally students do over what they are requisite to do, can be efficient in

problem solving, and prefer to be tested by new things<sup>(25)</sup>

Emotion engagement, the emotion engaged students practice affective responses such as attention, pleasure, and a sense of belonging<sup>(26)</sup>. Participation engagement intellectualized as nursing students' dynamic participation in learning activities and academic learning tasks through positive behaviors of inquiring questions, creating exertion, paying attention to lectures, and presenting persistence when faced with difficulties<sup>(1, 24)</sup>. Performance engagement described as the nursing students using different methods to deal with the learning tasks and determine their growth while making the task, then assess their performance through self-reflection after ending the task, and then perform essential modifications to increase their learning skills in the forthcoming<sup>(25)</sup>.

### **Significance of study**

Electronic and on-line learning are important part of Egypt's vision 2030, which considers digital transformation in all fields, especially higher education to achieve the sustainable development strategy<sup>(27, 28)</sup>. Additionally, several universities were compulsory to shift from face-to-face teaching to on-line teaching accompanied the COVID-19 regulations<sup>(29,30)</sup>. However, fewer efforts still to evidence quality of on-line learning through ascertain level of lectures on-line

teaching competence and nursing students' engagement in on-line learning (31-33). Thus, this study purposes to assess the relationship between lecturers' teaching competence and nursing students' engagement in the use of on-line learning.

### **Aim of the study**

This study aimed to

- assess lecturer' teaching competence and nursing students' engagement in the use of on-line learning.

### **Research questions**

- What are levels of nursing students' perception of lecturers' teaching competence in on-line learning?
- What are levels of nursing students' engagement in on-line learning?
- What is the relation between lecturers' teaching competence and nursing students' engagement in on-line learning?

### **Subjects and Method**

#### **Study design**

A descriptive, correlational design was applied.

#### **Setting**

This study was conducted at Faculty of Nursing, Tanta University.

#### **Subjects**

The nursing students recruited by proportionate stratified random sampling. In this study, each academic year was considered as a stratum and the samples were selected based on the proportion of the number of nursing student in each academic year. The total study sample was

calculated using the Epi. Info. Microsoft to ensure obtaining an adequate and representative size, where N= population size 2600, Z= confidence level at 95% (1.96), d= margin of error proportion (0.05). A total number of sample was 943 out of 2600 nursing students from different academic year who enrolled during data collection time in the academic year of 2021/2022. The sampling process was continued until the required sample size obtained.

### **Representative sample size from different academic year.**

Academic Year	Total Number	Sample Size
1 <sup>st</sup>	506	220
2 <sup>nd</sup>	1066	281
3 <sup>nd</sup>	555	228
4 <sup>th</sup>	473	214
Total	2600	943

### **Tools**

Two tools were used to gather data of the study.

#### **1- Teaching Competence Questionnaire**

It was based on the latest version of the Evaluation of Teaching Performance questionnaire (CEID) (9) and modified by the researchers by omitting and merging some statements to assess lecturer teaching competence as perceived by nursing students. It consisted of two parts as follows;

**Part (1):** Characteristics of nursing students: It included age, gender, place of residence, academic year, previous academic year achievement, and numbers of studied courses via on-line.

**Part (2):** Teaching competence questionnaire included 22 items categorized into three dimensions: Planning (3 items), development (13 items), and result (6 items). The nursing students' responses were evaluated against 3-points Likert Scale where 1 =strongly disagree 2= neutral and 3 =strongly agree. Levels of lecturer' teaching competence as perceived by nursing students calculated statistically based on the cut off value into three levels;  $\geq 75\%$  as high level;  $< 75\%$ -60% as moderate level;  $< 60\%$  as low level.

## 2- Nursing students' Engagement Questionnaire

It was constructed by **Dixon** (2010) <sup>(24)</sup> and modified by the researchers. It involved 16 statements for measuring nursing students' engagement that dividing into four dimensions involving: Skills engagement (5 statements), emotional engagement (5 statements), participation engagement (4 statements), and performance engagement (2 statements). The nursing students responses were measured on a three-point Likert Scale ranging from 1= strongly disagree 2= neutral, 3= strongly agree. Levels of nursing students' engagement scored statistically based on the cut off

value into three levels; $\geq 75\%$  as high level;  $< 75\%$ -60% as moderate level;  $< 60\%$  as low level.

**Validity and reliability:** The questionnaire was presented to a jury of five experts from the nursing administration specialty to check face and content validity. Based on this evaluation, necessary modifications were done, and a pilot study was conducted on 10% of nursing students (n=94) who are excluded from the total sample. Reliability of the tools was tested using Cronbach's alpha coefficient test which equal to 0.841, 0.883 for tool 1,2.

**Ethical considerations:** Approval was obtained from the relevant staff at the Faculty of Nursing, Tanta University before conducting the study. Written consent was obtained from nursing students at the beginning of an on-line questionnaire after explaining the aim of the study. Nursing students were assured that their responses would be confidential and would not influence or influence their assessment. Students were informed that their participation in this study was voluntary and anonymous, and that no penalties would be imposed for withdrawal or non-participation.

## Procedures

The structured, self-administered questionnaire was translated into Arabic for clarity and comprehension. After explaining the purpose of the study, the researcher contacted the nursing students

through WhatsApp application (students are contacted via a small clinical groups on WhatsApp) and asked for participation in the study via an electronic link with a questionnaire. Each participant took approximately 20-30 minutes to complete the questionnaire. The data collection period begins at the beginning of February 2022 and ends in May 2022 for the 2021/2022 academic year.

### Data analysis

Data were entered into a computer and analyzed using the IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Qualitative data were described in numbers and percentages. Normal distribution was confirmed using the Kolmogorov-Smirnov test. Quantitative data were described using range (minimum and maximum), mean, standard deviation and median. The significance of the results obtained was judged at the 5% level

### The used tests were

**Pearson coefficient:** To correlate between two normally distributed quantitative variables. **Mann Whitney test:** For abnormally distributed quantitative variables, to compare between two studied groups. **Kruskal Wallis test:** For abnormally distributed quantitative variables, to compare between more than two studied groups

### Results

**Table 1:** shows number and percent distribution of nursing student data. The

table shows that more than two-thirds (74.3%) of nursing student at age group  $\geq 20$  year with mean age  $20.48 \pm 1.43$ . High percent (77.9%) of nursing student were female and more than half (63.9%) were resident in rural area. Regarding to academic year 23.3% of nursing students at first year, 29.8% at second year, 24.2 % at third year, 22.7% at fourth year and 65.4% of them had excellent grade at previous academic achievement. Additionally, about two-thirds (68.9%) of nursing students reported that numbers of studied courses via on-line was ranged from 5-10 courses.

**Figure 1:** shows distribution of the nursing student according to their levels of perception of lecturer' teaching competence. In overall, more than half (54.3%) of nursing student perceived lecturer' teaching competence as high especially for planning, result, and development, respectively.

**Table 2:** shows mean percent score of lecturer' teaching competence dimensions as perceived by nursing students. The total mean percent score of lecturer' teaching competence as perceived by nursing students was  $71.58 \pm 26.60$ . The highest mean percent ( $73.22 \pm 29.08$ ) was related to planning dimension. While, the lowest mean percent ( $71.12 \pm 26.79$ ) was related to development dimension.

**Figure 2:** represents distribution of the nursing student according to their levels of engagement. This figure shows that, in

overall more than half ( 57.3%) of nursing student had high level of engagement. 78.4%, 61.9%, 55% and 48.4% of nursing students had high level of performance, skill, participation and emotional engagement, respectively. On the other hand, nursing students ranged from 20.1 – 30.2% had low level of all engagement dimensions.

**Table 3:** shows mean percent score of nursing students' engagement dimensions. The total mean percent score of student engagement was  $75.37 \pm 20.06$ . The highest mean percent ( $83.46 \pm 24.80$ ) was related to performance engagement. While, the lowest mean percent ( $71.12 \pm 26.79$ ) was related to participation engagement.

Table 4: shows correlation between lecturer' teaching competence and nursing students' engagement As observed in the table there was a statistically highly significant positive correlation between all dimensions of lecturer' teaching competence and all nursing students' engagement dimensions p. at  $<0.001$

**Figure 3:** shows correlation between overall lecturer' teaching competence and overall nursing students' engagement. As observed in the figure there was a

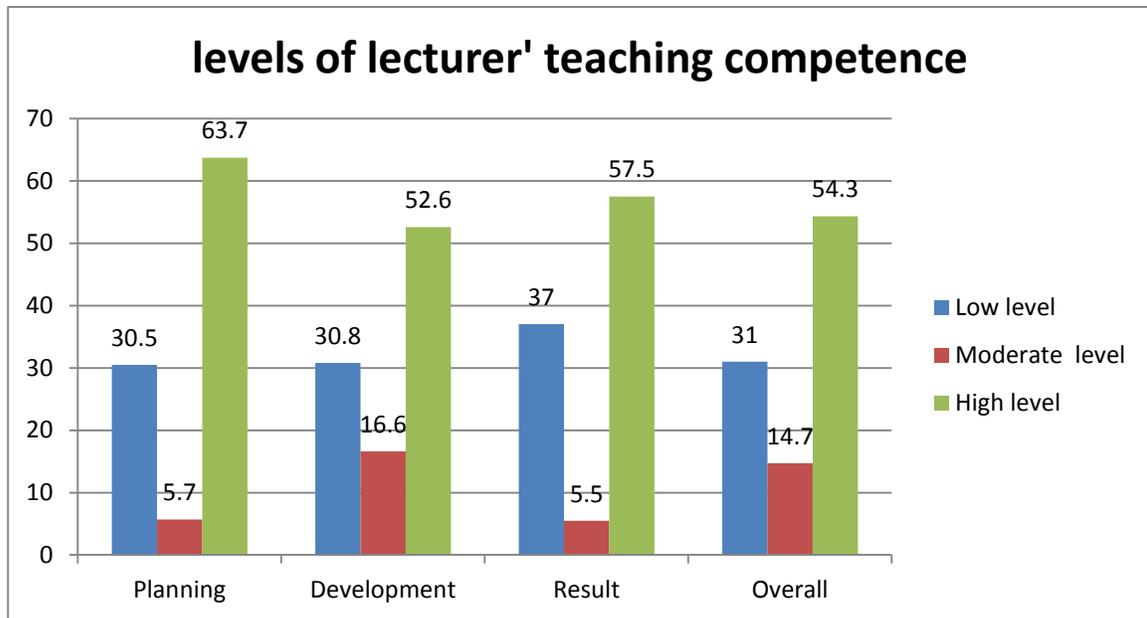
statistically highly significant positive correlation between overall lecturer' teaching competence and overall nursing students' engagement (**0.546**) where p. at  $<0.001$ .

**Table 5:** presents the relation between lecturer' teaching competence and nursing students' engagement with their characteristics. There was a statistically significant difference between nursing students' perception of lecturer' teaching competence and their characteristics except gender.

The table shows that nursing students  $<20$ , resident in rural area, in second & first academic year with excellent grades in previous academic year and studied more than 10 courses via on-line had the highest mean score in their perception of lecturer' teaching competence. Also, there was a statistically significant difference between nursing students' engagement and their characteristics except age and residency. The table shows that nursing students who are female, in second & first academic year with excellent grades in previous academic year and studied more than 10 courses via on-line had the highest mean score of engagement.

**Table (1): Nursing students' Characteristics (n = 943)**

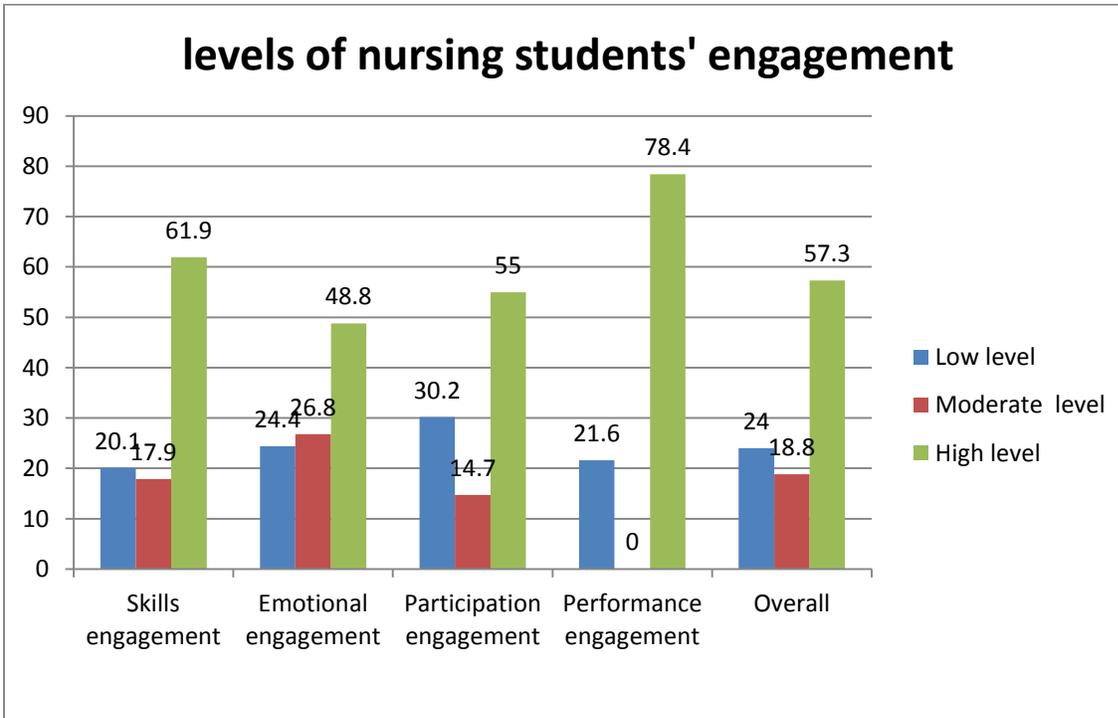
<b>Nursing students' demographic characteristics</b>	<b>No.</b>	<b>%</b>
<b>Age (years)</b>		
<20	242	25.7
≥20	701	74.3
<b>Min. – Max.</b>	18.0 – 23.0	
<b>Mean ± SD.</b>	20.48 ± 1.43	
<b>Median</b>	21.0	
<b>Gender</b>		
Male	208	22.1
Female	735	77.9
<b>Residency</b>		
Rural	603	63.9
Urban	340	36.1
<b>Academic year</b>		
1 <sup>st</sup> year	220	23.3
2 <sup>nd</sup> year	281	29.8
3 <sup>rd</sup> year	228	24.2
4 <sup>th</sup> year	214	22.7
<b>Previous academic year grades</b>		
Satisfactory	5	0.5
Good	53	5.6
Very good	268	28.4
Excellent	617	65.4
<b>Numbers of studied courses via on-line</b>		
Less than 5	70	7.4
5–10	650	68.9
More than 10	223	23.6



**Figure (1):** Distribution of nursing student according to their levels of perception of lecturer' teaching competence

**Table (2):** Mean percent and rank of lecturer' teaching competence dimensions as perceived by nursing students (n = 943)

Lecturer' teaching competence	Total Score	% Score	rank
	Mean ± SD.	Mean ± SD.	
<b>Planning</b>	9.86 ± 2.33	73.22 ± 29.08	1
<b>Development</b>	31.49 ± 6.97	71.12 ± 26.79	3
<b>Result</b>	14.58 ± 3.63	71.47 ± 30.29	2
<b>Overall</b>	<b>55.92 ± 12.24</b>	<b>71.58 ± 26.60</b>	



**Figure (2):** Distribution of nursing student according to their levels of engagement.

**Table (3):** Mean percent and rank of nursing students' engagement dimensions (n = 943)

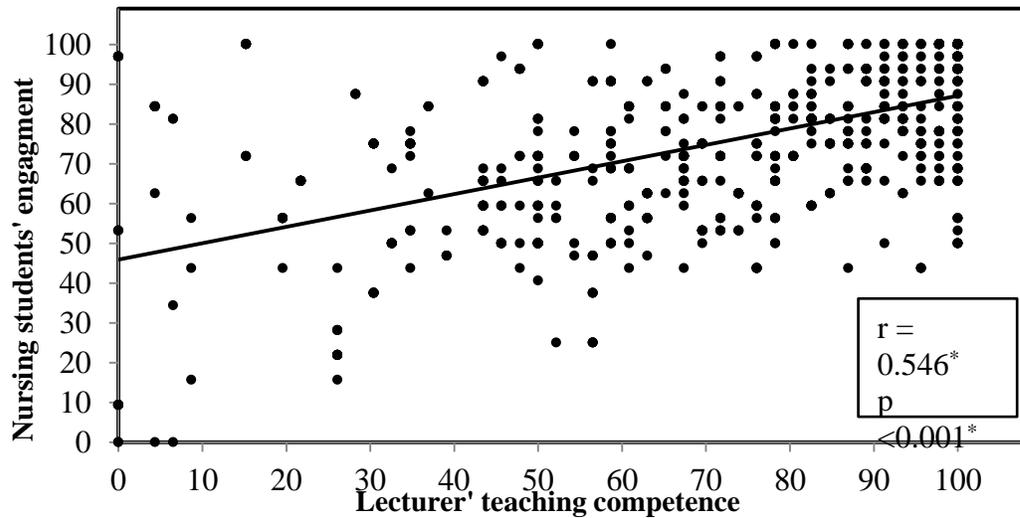
nursing students' engagement	Total Score	% Score	Rank
	Mean ± SD.	Mean ± SD.	
<b>Skills engagement</b>	12.72 ± 2.29	77.18 ± 22.87	2
<b>Emotional engagement</b>	12.36 ± 2.27	73.64 ± 22.74	3
<b>Participation engagement</b>	9.70 ± 2.07	71.25 ± 25.91	4
<b>Performance engagement</b>	5.34 ± 0.99	83.46 ± 24.80	1
<b>Overall</b>	<b>40.12 ± 6.42</b>	<b>75.37 ± 20.06</b>	

SD: Standard deviation

**Table (4):Correlation between lecturer’ teaching competence and nursing students’ engagement ( n = 943)**

Nursing students’ Engagement		Lecturer’ teaching competence			
		Planning	Development	Result	Overall
Skills engagement	r	0.483*	0.459*	0.482*	0.496*
	p	<0.001*	<0.001*	<0.001*	<0.001*
Emotional engagement	r	0.422*	0.389*	0.448*	0.435*
	p	<0.001*	<0.001*	<0.001*	<0.001*
Participation engagement	r	0.500*	0.470*	0.505*	0.512*
	p	<0.001*	<0.001*	<0.001*	<0.001*
Performance engagement	r	0.273*	0.288*	0.345*	0.318*
	p	<0.001*	<0.001*	<0.001*	<0.001*
Overall	r	<b>0.525*</b>	<b>0.498*</b>	<b>0.547*</b>	<b>0.546*</b>
	p	<b>&lt;0.001*</b>	<b>&lt;0.001*</b>	<b>&lt;0.001*</b>	<b>&lt;0.001*</b>

r: Pearson coefficient



**Figure (3): Correlation between lecturer’ teaching competence and nursing students’ engagement ( n = 943)**

**Table (5): Relation between lecturer' teaching competence and nursing students' engagement and their characteristics (n = 943)**

Nursing students' characteristics	N	Lecturer' Teaching competence		Nursing students' Engagement	
		Mean $\pm$ SD.	Median	Mean $\pm$ SD.	Median
<b>Age (years)</b>					
<20	242	75.45 $\pm$ 25.41	83.70	76.52 $\pm$ 21.92	81.25
$\geq$ 20	701	70.24 $\pm$ 26.89	76.09	74.98 $\pm$ 19.37	75.0
<b>U(p)</b>		74379.50* (0.004*)		78778.0 (0.097)	
<b>Gender</b>					
Male	208	68.92 $\pm$ 28.81	75.0	71.53 $\pm$ 23.33	75.0
Female	735	72.33 $\pm$ 25.91	78.26	76.46 $\pm$ 18.91	78.13
<b>U(p)</b>		71264.0 (0.134)		69130.50* (0.034*)	
<b>Residency</b>					
Rural	603	73.86 $\pm$ 24.51		78.26	
Urban	340	67.52 $\pm$ 29.56		76.09	
<b>U(p)</b>		91691.0* (0.007*)		99355.50 (0.431)	
<b>Academic year</b>					
1 <sup>st</sup> year	220	74.95 $\pm$ 26.12	82.61	76.53 $\pm$ 21.68	81.25
2 <sup>nd</sup> year	281	79.87 $\pm$ 22.15	89.13	79.64 $\pm$ 17.83	84.38
3 <sup>rd</sup> year	228	66.48 $\pm$ 27.17	73.91	72.81 $\pm$ 21.33	75.0
4 <sup>th</sup> year	214	62.65 $\pm$ 28.04	67.39	71.32 $\pm$ 18.55	75.0
<b>H(p)</b>		68.823* (<0.001*)		28.809* (<0.001*)	
<b>Previous academic year grades</b>					
Satisfactory	5	49.13 $\pm$ 43.95	69.57	41.25 $\pm$ 38.43	56.25
Good	53	60.38 $\pm$ 27.72	58.70	62.26 $\pm$ 21.28	65.63
Very good	268	70.88 $\pm$ 28.73	78.26	73.82 $\pm$ 19.96	75.0
Excellent	617	73.02 $\pm$ 25.10	78.26	77.45 $\pm$ 19.11	81.25
<b>H(p)</b>		11.097* (0.011*)		35.729* (<0.001*)	
<b>Numbers of studied courses via on-line</b>					
Less than 5	70	69.78 $\pm$ 25.69	71.74	73.26 $\pm$ 19.88	75.0
5–10	650	69.86 $\pm$ 27.78	76.09	74.16 $\pm$ 20.80	75.0
More than 10	223	77.15 $\pm$ 22.38	82.61	79.57 $\pm$ 17.21	81.25
<b>H(p)</b>		10.153* (0.006*)		10.695* (0.005*)	

SD: Standard deviation

p: p value for comparing between the studied groups

## Discussion

The demand for on-line learning opportunities has increased. The need for competent and appropriately trained lecturers has motivated all universities to reform their education systems<sup>(34)</sup>. Nursing is a practice profession that requires nurse lecturers to be competent in teaching to teach the nursing students and preparing them to meet the health care needs of our society.<sup>(26)</sup> The nurse lecturers must work further in developing themselves to improve the nursing students' engagement<sup>(35)</sup>.

Nursing students' engagement mostly pays toward quality student progression and future excellence nursing care. Increasing student engagement requires meaningful effort from lecturers<sup>(36)</sup>. The purpose of this paper is to assess the relation between nurses' lecturers teaching competence and students engagement in the use of on-line learning.

### Lecturers' on-line teaching competence

Result of this study showed that around two-thirds of nursing students perceived that their lecturers' have overall high and moderate level on-line teaching competence. Factually, nursing student perceived that their lecturer' had high and moderate level for planning, development of course and results dimensions of on-line teaching competence. This as the on-line learning was a mandated part of the nursing curriculum and became a basic educational system that all universities depend on it in delivering the educational activities for nursing students also on-line learning has been interpreted as a significant constituent at the most of universities therefore nurses lecturers attended educational programs about on-line teaching

so nurses lectures prepared and be competent in on-line teaching.

This is agreed with **Alabdullaziz et al. (2011)**<sup>(37)</sup> & **Markova et al. (2017)**<sup>(38)</sup> who found that student perceived lecturers as well in their on-line teaching skills. Also, **Mohamed et al. (2018)**<sup>(26)</sup> revealed that the overall nurse lecturers had high competencies. **Abdel haleem et al. (2018)**<sup>(8)</sup> found that most of students were satisfied with their lecturers teaching competence. **Portera et al., (2020)**<sup>(39)</sup> stated that lecturers must be competent in construction their teaching and cognitive attendance predictable while interacting knowledgably with their students, have ability to access digital technology and reliable internet. **Adedoyin and Soykan (2020)**<sup>(40)</sup> argued that competent on-line lecturers encompass quality on-line lectures design, the planning of lectures and the implementation of models for the improvement of lectures.

**Pellerone (2021)**<sup>(41)</sup>, **Tayyib et al. (2020)**<sup>(42)</sup> & **zaheer (2016)**<sup>(43)</sup> mentioned that lecturers should have the following teaching competence; readiness to alteration, the ability to outline learning objectives and create and re-construct those objectives, the capability to deliver a structure, project training material, and existing revolution, and the capacity to improve their talent to solve problems, confirming the quality.

The result of this study on contrary with **Gillett-Swan (2017)**<sup>(44)</sup> who mentioned that lecturers need to be proficient in using on-line teaching. Also, **Tara et al. (2020)**<sup>(45)</sup> stressed about the importance of university role in providing lecturers with required

opportunities to develop teaching skill. **Ndayisenga2021**<sup>(4)</sup> revealed that not all lecturers are well prepared to efficiently teach the courses in ways that enable the facilitation of teaching methods to support optimal learning . **Abdel haleem et al. 2018**<sup>(8)</sup> showed that nearly about one quarter of nursing lecturers had high teaching skills. **Elkhaldy 2012**<sup>(46)</sup> found that lecturers rarely use teaching media, concerning of setting objectives . **Rateb. 2013**<sup>(47)</sup> found that total teaching skills were low, especially regarding using teaching media and setting objectives.

### **Nursing students' on-line engagement**

Analysis of the present study results revealed two-thirds of nursing student had high and moderate level of engagement. Statistically high percent of nursing students had high and moderate level of performance, skill, participation and emotional engagement dimensions. This may be due to that the students were participated and engaged in their learning. Students are able to manage their time and duties, paid attention to lectures content, put in effort, and preferred to get good marks. This may show that lecturers were practicing greatest performs correlated to engagement and they were effective in on-line teaching as perceived by nursing students. As well as, this may be due to today's students are digital natives, and the common of these students are well skillful at using technology, also nursing student have willingness to graduate with high score especially more than half of them had excellent grade at previous academic achievement.

The same result founded by **Hudson & Carrasco 2017**<sup>(17)</sup>, **Doris et al 2018**<sup>(48)</sup>, **Hudson et al 2017**<sup>(17)</sup> and **Tayyib & Alsolami 2020**<sup>(22)</sup> who revealed that the students are highly engaged with on-line learning. Also **Presa et al 2018**<sup>(18)</sup>, **Baloran et al 2021**<sup>(1)</sup> showed that the students had high level for all on-line engagement dimensions in terms of skills, emotion, participation, and performance, these students are academically focused and committed. **Ndayisenga et al 2020**<sup>(4)</sup> stated that the use of on-line learning can help to decrease the dropout rate in higher education and improve nursing students' performance. Moreover, on-line learning facilitate nursing lecturers to find the best ways to better engage and involve students.

On the other hand, **Wan et al (2020)**<sup>(49)</sup> disagree with the result and stressed that low student learning engagement and high failure rates are common problems in on-line learning. In on-line learning, it is difficult to maintain engaged students during the learning process. **Bedir et al 2020**<sup>(50)</sup>, **Suliman 2021**<sup>(51)</sup> opposed on-line learning, assert that students in on-line learning are fewer likely to engage in the instructions than they are in face-to-face lectures.

### **Correlation among variables**

Our study discovered that there is a statistically highly significant positive correlation between lecturers' teaching competence and nursing students' engagement. This result in line with **Mazer's 2013a**<sup>(52)</sup> finding that lecturers teaching competence have a positive effect on student engagement. **Ali 2016**<sup>(34)</sup> mentioned that

nursing lectures provided by on-line learning can engaged students. **Ghasemi et al., 2020**<sup>(53)</sup> reported that using on-line learning promoting nursing students' engagement. **Waheed 2017**<sup>(54)</sup> concluded that, student participation in on-line learning improves nursing students' engagement.

**Stanley et al., 2018**<sup>(55)</sup>, **van Kessel 2018**<sup>(56)</sup> indicated that effective lecturers on-line learning stimulate active student engagement. Also, **Boyd et al 2015**<sup>(57)</sup> reported that lecturers teaching competence in the on-line learning is important element to student engagement in their nursing course and with each other.

### Conclusion

According to the study findings, nursing student perceived a high level of lecturer' teaching competence and they had high level of engagement in the use of on-line learning. Furthermore, there was a statistically highly significant positive correlation between overall lecturer' teaching competence and overall nursing students' engagement

### Recommendations

On the line of the findings of the current study the following recommendations are suggested:

#### For the faculty's administration

- Periodic regular educational on-the-job training program is needed for lecturers in order to foster their competencies and maintain them up-to-date regarding the use of different teaching strategies, evidence-based teaching practices, educational technologies,

on-line testing and multiple assessment designs, and communication periodically.

- Construct regular feedback approaches for lecturers to promote the precise improvement of their competencies.
- **For lecturers**
- Give students clear instructions, especially regarding expectations for participation.
- Engage students by showing passion for the subject matter. Learn students' names and build 'helping, trusting and caring relationships'.
- Encourage participation and keep students engaged throughout the week by using polls, breakout rooms, and home assignment.
- Offer diverse curriculum formats to stimulate all types of learners and maintain commitment and interests of all students.
- **Further research** can be conducted to identify the relationship between lecturers' competence and post graduate nursing students 'engagement.
- Relationship between lecturers' competence and nursing students' academic achievement.

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