

Nursing Students' Attitude and Satisfaction regarding to Blended Learning at the Time of COVID 19 Pandemic

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Abstract

Background: Blended learning is an advance dmodel that encompasses the advantages of both traditional teaching in the classroom, Information and Communication Technology (ICT) supported learning. Blended learning requires rigorous efforts, right attitude, handsome budget and highly motivated teachers and students for its successful implementation. **Aim:** To assess the nursing students' attitude and satisfaction toward blended learning at the time of COVID 19 pandemic. **Subjects and Method: Design:** A descriptive design was used to achieve study aim. **Subjects:** 400 students participated in the study were drawn from all four study levels (100 of each) of undergraduate students from both sexes who enrolled in blended learning courses for two semesters at the academic year 2020\2021. **Tools:**Two tools were used to gather data, Students' attitude questionnaire and Student Satisfaction Survey Form. **Results:** 57.0% of studied students were female, 94% of them had secondary school certificate, 93.8% of them use smart phones, 84.2% had positive attitude toward blended learningand 90.2% were unsatisfied toward blended learning. **Conclusion:** Levels of nursing students' attitude and satisfaction shows non-significant relationship between sex and last scientific certification. There wasstatistically non-significant weak negative correlation between attitude total score and satisfaction total score among studied sample (-.040,p=.425). **Recommendations:** For faculty administration: Involve blended learning as alternative plan at the time of crisis. Improve the infrastructure of internet for effective implementation of blended learning. Encourage the students to discuss the barriers for using blended learning and support from administrative authority to deal with the barriers face the implementation of blended learning.

Key words: Blended learning, Attitude, Satisfaction, Nursing students, COVID 19 Pandemic

Introduction

Utilization of distance learning in higher education institutions has extended around the world ⁽¹⁾. Distance learning using digital tools can be defined as "the utilization of electronic innovation to convey, backing and improve both learning and instructing and includes correspondence among students and educators using on the web content" ⁽²⁾. Distance learning might work with an instructive change from an educator focused methodology in which talks may bring about a single direction correspondence, to a student focused methodology which includes students' collaboration with their instructors. Training through distance learning with computerized instruments can work with changeability in learning circumstances and course content⁽³⁾.

A blended learning (BL) approach involving campus based learning and distance learning may increase motivation for students in their learning process in comparison with distance learning only ⁽⁴⁾. Online learning in nursing education was as effective as traditional campus based learning as revealed in many studies⁽⁵⁾. Also, previous studies reported contradictory or equivalent results

regarding the advantages and barriers of traditional campus based learning and distance learning using digital tools for nursing education ⁽⁶⁾.

The call for blended learning as a mode of instruction arises from the common concern of keeping the educators and students safe from the pandemic by restricting physical contact. However, the distance learning setting presents some challenges like information technology (IT) skills and resources ⁽⁷⁾. Blended learning has been described as the convenient combination of faceto face teaching and online approaches and learning technologies which provide synchronous and asynchronous teaching tools and educational strategies⁽⁶⁾.

Recently, the use of BL in nursing education has increased dramatically⁽²⁾. It has been shown to aid in academic performance and to add educational value in terms of attitudes and motivation, student satisfaction, knowledge, and communication skills ^(2,8).

Blended learning is characterized by impressive learner autonomy, provides students with a high level of independence and control over their learning ⁽⁹⁾. So, it has been considered to facilitate Metacognitive skill development and collaborative learning ⁽¹⁰⁾. The upgrade of student

inspiration through techniques as achievement motivation has been related to good self-regulating learning (SRL) skills and successful learning in BL environments⁽¹¹⁾. Today, debates of blended learning have started to look at the profits derivative from learning conditions described as direct education and varied patterns of learning. Nevertheless of contrasts done by academics and designers, those studying blended learning have approved that student gratification is a standard obligation for effective application. Student satisfaction is reflected an essential aspect in determining the value of blended learning⁽¹⁰⁾. Level of students contact and the quality of the information accessibility and communications technology (ICT) are basics that can affect their attitudes and readiness to use e-learning⁽¹²⁾. COVID-19 pandemic caused a great interruption of the academic field. The fight to fast move into electronic learning (e-learning) settings has impacted colleges, teachers and students at all levels. The number of institutions and universities around the world, providing distance education programs has expanded significantly and numerous nations have seen a stream in distance education. The United Nations Educational, Scientific and Cultural Organization (UNESCO) revealed that more than 1.37 billion students (80%

of the global student population) have been influenced by this crisis⁽¹³⁾. The disruptions have constrained students to move from physical college campuses and adjust to new online educational settings.

They have confronted by mixed feelings of fear, loneliness, and uncertainty over what will happen with classes, exams, graduation and other important assignments affecting their study path, such as platform availability issues not withstanding potential corona virus health threats⁽¹⁴⁾.

Significance of the study:

At the beginning of 2020, many countries have closed most sectors including the education sector due to unfamiliar situations caused by outbreak COVID 19 pandemic. Faculty of Nursing, Mansoura University was not an exemption from these changes. The methods of learning are extremely important topic that should be discussed in the light of combating the pandemic. The universities seek to adapt to new circumstances of teaching and learning during these unfamiliar periods to better serve their students. So, the aim of this study is to assess the level of overall students' attitude and satisfaction toward blended learning at the time of COVID 19 pandemic.

Aim of the study

The aim of this study is to assess nursing students' attitude and satisfaction toward blended learning at the time of COVID 19 pandemic.

Research questions:

1. What is the level of students' attitude toward blended learning?
2. What is the level of students' satisfaction toward blended learning?
3. What is the relation between students' attitude and satisfaction toward blended learning?

Subject and methods

Study design:

A descriptive research design was utilized to conduct the study.

Descriptive studies are used when little is known about a particular phenomenon. The researcher observes, describes, and documents various aspects of a phenomenon. Correlational designs involve the systematic investigation of the nature of relationships, or associations between and among variables, rather than direct cause-effect relationships. Descriptive correlational studies describe the variables and the relationships that occur naturally between and among them⁽¹⁵⁾.

Study Setting:

The study was conducted at Faculty of Nursing, Mansoura University.

Study Sample:

Consisted of 400 students who was drained from all four study levels (100 of each) of undergraduate students from both sexes who enrolled in blended learning courses for two semesters during the academic year 2020\2021. Steve Thompson formula was utilized to calculate the sample size, at 5% α error (95.0% significance) and 20.0 β error (80.0% power of the study) Janet L. Peacock and Phil J. Peacock,(2020).

$$N \times P (1-P)$$

$$n = \frac{N \times P (1-P)}{(N-1 \times (d^2 / Z^2)) + P (1-P)}$$

n=Sample size

N=Total society size (2527 students)

Z= Corresponding standard class of significance 95 d=error percentage = (0.05) = 1.96

P= Percentage of availability of the character and objectivity=(0.1)

d = Error percentage = 0.05

The sample size was calculated to be 333 students increased to be 400 to increase power.

Tools of the study:

Two tools adapted by the researcher used to collect data.

Tool I: Students' attitude questionnaire

that composed of two parts:

1st part: Students' demographic\personal characteristic as regards their age, gender, and level of study.

2nd part: Students' attitude questionnaire form.

This tool was adapted from Tang and Chaw (2013)¹⁷ and aimed to investigate students' attitudes towards several dimensions of blended learning. The instrument consists of 34 items that measure students' attitude towards six different aspects of blended learning: learning flexibility (4 items); online learning (8 items); study management (6 items); technology (4 items); classroom learning (5 items) and online interaction (7 items) with 5 point Likert Scale ranging from '1-strongly disagree' to '5-strongly agree'. **Level of attitude**

According to the scoring system of the previously mentioned above form, the level of students' attitude can be classified as follow: Negative attitude < 102, Positive attitude from 102 -170.

Tool II: Student Satisfaction Survey Form (SSSF),

Adopted from Naji, Nachouki, and Ankit, (2012)¹⁸ which consists of 35 items on a 5 point Likert Scale, ranging from '1-strongly disagree' to '5-strongly agree'. It addresses elements integral to student satisfaction in blended learning

environments. The thirty five items addressed under the following five student satisfaction elements: instructor (5 items), technology (6 items), class management (3 items), interaction (9 items), and instruction (12 items).

Level of satisfaction

According to the scoring system of the previously mentioned above form, the level of students' satisfaction can be classified as follow: Unsatisfied < 140, Satisfied from 140-175.

Method

Validity and reliability of the tools:

The initial version of the questionnaire was reviewed and judged by five experts in the field of faculty education to test its content validity and clarity and accordingly needed modifications were done. It was calculated and found to be (96%). The questionnaire's reliability and validity were computed and achieved by Cronbach Alpha's. Coefficient level was achieved above 0.71.

A pilot study:

A pilot study was conducted on 10% of students' sample from the previously mentioned above settings to test the clarity, feasibility and applicability of the tools, modifications needed were done. The pilot study sample was excluded from the original sample.

Ethical considerations:

An official permission to conduct the study was obtained from the Dean of Faculty of Nursing, Mansoura University. Oral consent was obtained from each student enrolled in the study after providing comprehensive information about the nature of the study, aim, benefits. The researcher was emphasizing that participation is absolutely voluntary. Participants was informed that they have the right to refuse to participate in the study and withdrawn at any time.

Field work:

The study was conducted from October 2020 to April 2021. The questionnaire was distributed to the selected students who were enrolled in groups by the researchers according to their lectures schedule for every level. The researchers explained the aim of the study, the different parts and components of the tool used, and the student's oral instructions were given. The time needed to accomplish the questionnaire ranges from 10 to 20 minute. All participants were asked to fill out the questionnaire and respond to it at the end of the course.

Statistical analysis and data interpretation:

Data were fed to the computer and analyzed using IBM SPSS Corp.

Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp. Qualitative data were described using number and percent. Quantitative data were described using mean, standard deviation for parametric data after testing normality using Kolmogorov-Smirnov test. Significance of the obtained results was controlled at the (0.05) level.

Data analysis

Qualitative data:

- Chi-Square test for association of 2 or more groups

Spearman's correlation:

The Spearman's rank-order correlation is used to determine the strong point and direction of a linear relationship between two non-normally distributed continuous variables and / or ordinal variables.

Results

Table (1): Frequency distribution of the studied students' demographic characteristics. This table clarifies that age of studied students were equally distributed with percentage of 25% for each age category. Females were more prevalent in the study sample than males; they constitute 57.0% of studied students. Regarding last scientific certification 94% had secondary school certificate and only 6% had technical Institute certificate.

Level of study was equally distributed among studied students from 1st to 4th level with percentage of 25% for each level. Concerning mode of access to online courses, the highest proportion 93.8% of studied students use Smart phones whereas only 6.2% use Laptop or PC.

Table (2): Frequency distribution and means of nursing students' attitude toward blended learning dimensions. This table represents frequency distribution and means of nursing student's attitude toward blended learning dimensions, which divided into six main domains. Mean of learning flexibility was 12.06 ± 4.58 . Regarding online learning's mean represented as 22.69 ± 2.04 . Study management dimension was 17.36 ± 2.01 and technology dimension was 13.03 ± 1.38 concerning mean of classroom learning was represented as 24.34 ± 1.09 . Online interaction was 17.87 ± 1.95 , while mean of total attitude was 107.34 ± 5.92 .

Figure (1): Level of attitude among studied students toward blended learning. As illustrated in figure (1) the percentage of students who had positive attitude toward blended learning was 84.2% while negative attitude represented as 15.8% of studied sample.

Table (3): Frequency distribution and means of nursing students' satisfaction

toward blended learning dimensions. This table represents frequency distribution and means of nursing students' satisfaction toward blended learning dimensions, which divided into five main categories. Students' mean satisfaction regarding instructor was 14.37 ± 1.43 . The mean of their satisfaction regarding technology was 15.67 ± 1.35 . Class management showed the mean of 9.17 ± 1.01 . The mean of interactions dimension was 25.09 ± 2.24 . Students' mean regarding instruction was 34.57 ± 2.42 . While mean of total satisfaction was 98.88 ± 4.09 .

Figure (2): Level of satisfaction among studied students toward blended learning. As revealed in figure (2) the majority of studied students (90.2%) was unsatisfied toward blended learning while 9.8% of them was satisfied.

Table (4): Relation between levels of nursing students' attitude and their characteristics.

Level of nursing students' attitude showed no significant relationship between sex and last scientific certification where $P=0.278$ & 0.652 respectively while there was a statistically significant relation between level of attitude and level of study $P=0.008$.

Table (5): Relation between levels of nursing students’ satisfaction and their characteristics.

Level of nursing students’ satisfaction showed no significant relationship between sex and last scientific certification where $P=0.938$ & 0.639 respectively while there was a statistically significant relation between level of satisfaction and level of study $P=0.005$.

Table (6): Correlation between nursing students’ attitude total score, age and level of study.

This table shows statistically significant weak negative correlation between nursing students’ attitude total score and both age (-

$.147, p=.003$) and level of study which also was (- $.147, p=.003$).

Figure (3) and (4): Correlation between nursing students’ satisfaction total score, age and level of study. As revealed in figure (3) and (4) there is a statistically significant weak positive correlation between nursing students’ total satisfaction score and both age (- $.143, p=.004$) and level of study which also was (- $.143, p=.004$)

Table (7): Correlation between attitude total score and satisfaction total score among studied sample. This table shows statistically non-significant weak negative correlation between attitude total score and satisfaction total score among studied sample (- $.040, p=.425$).

Table (1): Frequency distribution of the studied students' demographic characteristics (n=400)

<i>Students' Demographic characteristics</i>	N=400	%
Age		
• 19 Years	100	25.0%
• 20 Years	100	25.0 %
• 21 Years	100	25.0%
• 22 Years or more	100	25.0%
Sex		
• Male	172	43.0%
• Female	228	57.0%
Last scientific certification		
• Secondary School	376	94 %
• Technical Institute	24	6 %
Level of study		
• 1st level	100	25.0%
• 2nd level	100	25.0%
• 3rd level	100	25.0%
• 4th level	100	25.0%
Mode of access to online courses		
• Laptop or PC	25	6.2%
• Smart phones	375	93.8%

Table (2): Frequency distribution and means of nursing students' attitude toward blended learning dimensions (n=400)

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	No	%	No	%	No	%	No	%	No	%
1- Learning flexibility										
1. I prefer to have limitless access to lecture materials	82	20.5	52	13.0	131	32.8	23	5.8	112	28.0
2. I prefer to choose where I want to study	71	17.8	63	15.8	124	31.0	46	11.5	96	24.0
3. I prefer to study at my pace	53	13.2	48	12.0	188	47.0	62	15.5	49	12.2
4. I would like to choose time of my study	48	12.0	112	28.0	140	35.0	39	9.8	61	15.2
Mean ± SD 12.06 ± 4.58										
2- Online Learning										
5. I suppose that on field learning is more successful than online learning	0	0.0	0	0.0	15	3.8	14	3.5	371	92.8
6. Self-directed learning was pleased for me	72	18.0	304	76.0	19	4.8	2	0.5	3	0.8
7. I don't refuse to have my lessons online	95	23.8	201	50.2	74	18.5	27	6.8	3	0.8
8. I prefer online learning as it supply sufficient content	127	31.8	184	46.0	68	17.0	19	4.8	2	0.5
9. I would like to diminish lecture time within classroom	7	1.8	217	54.2	118	29.5	37	9.2	21	5.2
10. I would like to study online instead of classroom	375	93.8	7	1.8	18	4.5	0	0.0	0	0.0
11. It is interesting to study online	0	0.0	0	0.0	0	0.0	0	0.0	400	100.0
12. It is not easy to study online	25	6.2	80	20.0	144	36.0	128	32.0	23	5.8
Mean ± SD 22.69 ± 2.04										
3- Study Management										
13. I'm more likely to get assignment due dates in an online learning environment	40	10.0	87	21.8	146	36.5	98	24.5	29	7.2
14. I coordinate my time well during online study	16	4.0	40	10.0	171	42.8	0	27.5	0	15.8
15. I can study repeatedly more online	6	1.5	13	3.2	88	22.0	249	62.2	44	11.0
16. Online learning inspire me to get ready well for my studies	305	76.25	56	14.0	30	7.5	8	2.0	1	0.2
17. Online learning helps me to construct plans	335	83.8	0	0.0	65	16.2	0	0.0	0	0.0
18. Online learning helps me to take the responsibility of my studies	0	0.0	0	0.0	60	15.0	76	19.0	264	66.0
Mean ± SD 17.36 ± 2.01										
4- Technology										
19. I think that Web is a helpful learning platform	0	0.0	206	51.5	1	0.2	89	22.2	104	26.0
20. I am intimate with Web technologies	13	3.2	22	5.5	282	70.5	63	15.8	20	5
21. Web technologies are easy to use for me	8	2.0	49	12.2	293	73.2	39	9.8	11	2.8
22. I believe that we ought to utilize technologies in learning	2	0.5	0	0.0	349	87.2	32	8.0	17	4.2
Mean ± SD 13.03 ± 1.38										
5- Classroom Learning										
23. I feel better once I meet other colleagues in the classroom	0	0.0	0	0.0	42	10.5	86	21.5	272	68.0

24. I prefer the rapid feedback during meeting my lecturer personally.	0	0.0	1	0.2	4	1.0	11	2.8	384	96.0
25. Collaboration with others vis-a-vis is more effective	0	0.0	1	0.2	2	0.5	9	2.2	388	97.0
26. I learn effectively through lecturer-directed classroom activities	0	0.0	0	0.0	5	1.2	18	4.5	377	94.2
27. I educate effectively when someone guides me personally	0	0.0	1	0.2	2	0.5	23	5.8	374	93.5
Mean \pm SD 24.34 \pm 1.09										
6- Online Interaction										
28. I feel separated in an environment of online learning	208	52.0	103	25.8	89	22.2	0	0.0	0	0.0
29. It is suitable for me to use Web technologies in exchanging knowledge with others	0	0.0	79	19.8	321	80.2	0	0.0	0	0.0
30. I prefer online interaction with my lecturer	73	18.2	90	22.5	209	52.2	28	7.0	0	0.0
31. I prefer interaction outside of the classroom with other students	21	5.2	42	10.5	261	65.2	52	13.0	24	6.0
32. I find it effortless to deal with others online	39	9.8	106	26.5	165	41.2	90	22.5	0	0.0
33. I acknowledge simple online access to my lecturer	30	7.5	95	23.8	217	54.2	58	14.5	0	0.0
34. It is easy for me to work with a virtual team in performing assignments	67	16.8	140	35.0	193	48.2	0	0.0	0	0.0
Mean \pm SD 17.87 \pm 1.95										
Total attitude					Mean \pm SD 107.34 \pm 5.92					

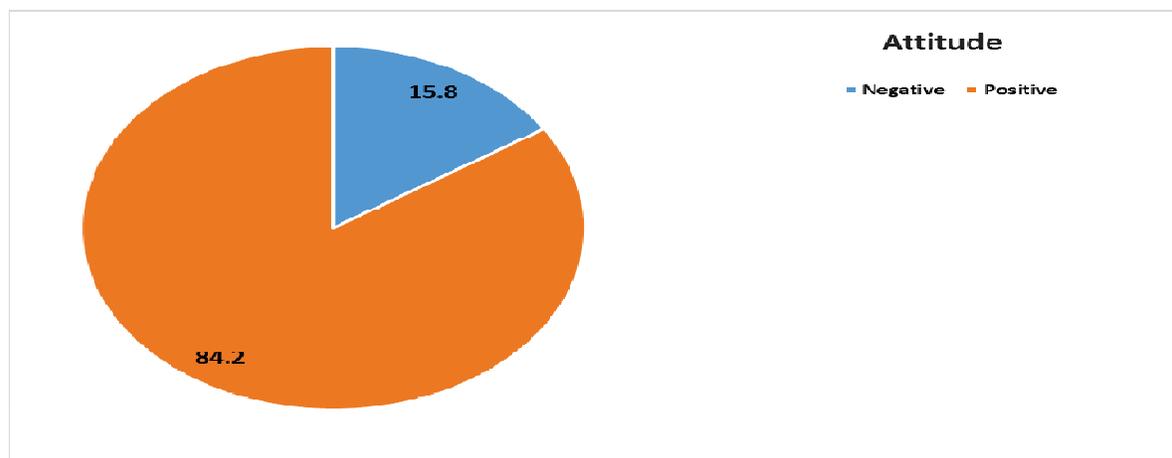


Figure (1): Level of attitude among studied students toward blended learning (n=400)

Table (3): Frequency distribution and means of nursing students' satisfaction toward blended learning dimensions (n=400)

	Strongly Dis-satisfied		Dis-satisfied		Neutral		Satisfied		
	No	%	No	%	No	%	No	%	
1- Instructor									
1. The instructor helps me to be a member of the class	29	7.2	85	21.2	192	48.0	94	23.5	
2. I'm satisfied with the availability of the instructor.	0	0.0	103	25.8	221	55.2	76	19.0	
3. The instructor utilizes technology of blended learning well	0	0.0	25	6.2	258	64.5	117	29.2	
4. Class assignments were communicated to me obviously.	0	0.0	37	9.2	263	65.8	0	0.0	
5. Tests and other task evaluation feedback was given in a timely pattern	0	0.0	230	57.5	170	42.5	0	0.0	
Mean ± SD 14.37±1.43									
2- Technology									
6. The voice of instructor is audible	37	9.2	183	45.8	180	45.0	0	0.0	
7. Course content clearly showed on the smart board	0	0.0	0	0.0	400	100.0	0	0.0	
8. The microphone is working in a well condition	0	0.0	48	12.0	320	80.0	32	8.0	
9. The video picture is obvious when the lecturer explain the lesson.	0	0.0	40	10.0	252	63.0	108	27.0	
10. Technical issues are not recurrent and they do not antagonistically influence my understanding.	230	57.5	170	42.5	0	0.0	0	0.0	
11. The technology utilized for blended teaching is reliable	42	10.5	78	19.5	214	53.5	66	16.5	
Mean ± SD 15.67±1.35									
3- Class management									
12. Punctuality is highly noticed during blended learning classroom	0	0.0	0	0.0	400	100	0	0.0	
13. The lecturer always takes absenteeism	0	0.0	97	24.2	201	50.2	102	25.5	
14. My attendance in an online classes, the same as on field classes	0	0.0	86	21.5	165	41.2	149	37.2	
Mean ± SD 9.17±1.01									
4- Interactions									
15. Session of blended learning keeps me constantly focused and alert.	0	0.0	93	23.2	205	51.2	102	25.5	
16. Communication is appropriately maintained in the blended learning classroom,	189	47.2	133	33.2	56	14.0	22	5.5	
17. Presence of male or female students in the blended learning classroom paying attention to my participation not interfere with my communication.	0	0.0	0	0.0	259	64.8	141	35.2	
18. A blended learning enhances the students' need to go to their lecturer in their office-hours.	0	0.0	107	26.8	185	46.2	108	27.0	
19. During the blended learning classroom, I can	121	30.2	159	39.8	117	29.2	3	0.8	

discontinue the lecturer to ask any question.								
20. Quality of interaction was satisfied among all involved parties	0	0.0	36	9.0	204	51.0	160	40.0
21. I'm satisfied with the collaboration activities during the course	0	0.0	0	0.0	259	64.8	141	35.2
22. The manner of communication with other students was satisfied for me.	72	18.0	90	22.5	210	52.5	28	7.0
23. My participation in the class was convinced for me.	34	8.5	98	24.5	187	46.8	81	20.2
Mean ± SD 25.09±2.24								
5- Instruction								
24. Utilization of technology in the blended learning promote me to educate independently	0	0.0	54	13.5	229	57.2	117	29.2
25. My comprehension is enhanced in comparison with similar courses I studied before.	0	0.0	54	13.5	243	60.8	103	25.8
26. My achievement in exams is improved in comparison with previously similar courses that studied before	87	21.8	1	0.2	213	53.2	99	24.8
27. The level of effort this course required was satisfied for me.	0	0.0	79	19.8	253	63.2	68	17.0
28. I'm satisfied with my achievement in this course	2	0.5	20	5.0	262	65.5	116	29.0
29. I suppose that my final grade will be satisfied for me.	34	8.5	34	8.5	244	61.0	88	22.0
30. I am fulfilled with my ability to implement what I have learned.	80	20.0	65	16.2	226	56.5	29	7.2
31. In case of I know this was going to be a blended learning class, I would have engaged in it.	75	18.8	67	16.8	232	58.0	26	6.5
32. I'm ready to take other courses via the blended learning delivery mode	28	7.0	102	25.5	244	61.0	26	6.4
33. I am fulfilled with this course to recommend it to others.	18	4.5	74	18.5	285	71.2	23	5.8
34. I'm fulfilled sufficiently with this learning experience in comparison with face-to-face course settings,	23	5.8	53	13.2	295	73.8	29	7.3
35. I interest in working on duties by myself	46	11.5	40	10.0	276	69	38	9.5
Mean ± SD 34.57±2.42								
Total satisfaction					Mean ± SD 98.88±4.09			

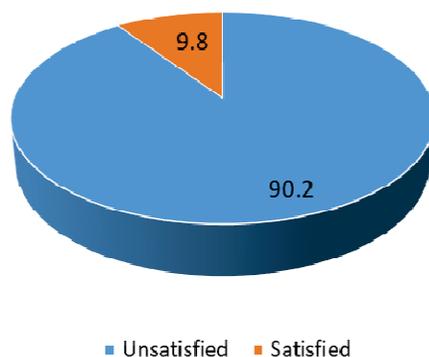


Figure (2):Level of satisfaction among studied students toward blended learning (n=400)

Table (4): Relation between levels of nursing students’ attitude and their characteristics.

	Level of Attitude		Test of significance
	Negative N=63	Positive N=337	
Sex			
• Male	31(49.2)	141(41.8)	$\chi^2=1.175$ P=0.278
• Female	32(50.8)	196(58.2)	
Last Scientific certification			
• Secondary School	60(95.2)	316(93.8)	$\chi^2=0.203$ P=0.652
• Technical institute	3(4.8)	21(6.2)	
level of the study			
• 1 st	13(20.6)	87(25.8)	$\chi^2=11.96$ P=0.008*
• 2 nd	9(14.3)	91(27.0)	
• 3 rd	15(23.8)	85(25.2)	
• 4 th	26(41.3)	74(22.0)	

χ^2 =Chi-Square test

*statistically significant if p<0.05

Table (5):Relation between levels of nursing students’ satisfaction and their characteristics

	Level of Satisfaction		Test of significance
	Unsatisfactory N=361(%)	Satisfactory N=39(%)	
Sex			
• Male	155(42.9)	17(43.6)	$\chi^2=0.006$
• Female	206(57.1)	22(56.4)	P=0.938
Last Scientific certification			
• Secondary School	340(94.2)	36(92.3)	$\chi^2=0.219$
• Technical institute	21(5.8)	3(7.7)	P=0.639
level of the study			
• 1 st	91(25.2)	9(23.1)	$\chi^2=13.04$
• 2 nd	89(24.7)	11(28.2)	P=0.005*
• 3 rd	98(27.1)	2(5.1)	
• 4 th	83(23.0)	17(43.6)	

χ^2 =Chi-Square test

*statistically significant if p<0.05

Table (6): Correlation between nursing students’ attitude total score, ageand level of study

	Attitude total score R
Age groups /years	-.147** (.003)
Level of study	-.147** (.003)

r:Spearman correlation co-efficient

**Correlation is significant at the 0.01 level

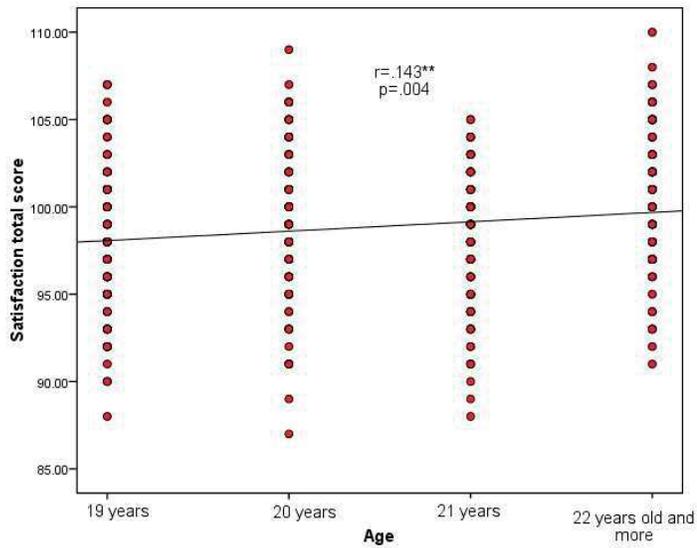


Figure (3): Correlation between nursing students' satisfaction total score and age

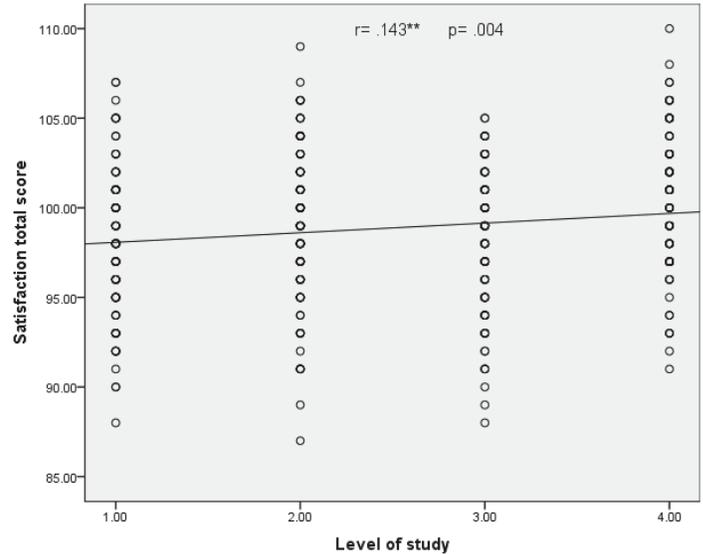


Figure (4): Correlation between nursing students' satisfaction total score and level of study

r: Spearman correlation co-efficient

**Correlation is significant at the 0.01 level

Table (7):Correlation between attitude total score and satisfaction total score among studied sample

	Satisfaction total score	
Attitude total score	r	-.040
	P	.425

r:Spearman correlation co-efficient

**Correlation is significant at the 0.01 level

Discussion

Blended learning (or mixed or hybrid learning) emerged as a new teaching method for distance learning among higher education institutions. It integrates face-to-face teaching with web-based learning through the application of technology and the internet to improve students' learning and encourage teachers' to change their methods of education, and therefore to shift learning to a more student-centered model rather than a teacher-centered learning model. There is a need to measure the quality of blended learning through students' attitude and satisfaction because of increasing the usage of blended learning **Alsalhiet al.(2019)⁽¹⁸⁾ and Abdul Rahman et al. (2015)⁽¹⁹⁾.**

The key factor in determining the quality of blended learning is students' satisfaction through measuring students' level of pleasure and the efficacy of the student's education experience **Naji, et al. (2012)⁽¹⁷⁾.** Attitude concerning technology may be shaping think about student willingness for online learning, through this extremely advanced technology era, it's common for students to be adaptive and amenable of current technologies. Thus, their attitude encourages them to use these technologies to emphasize the standard of teaching and learning **Alanazy(2018)⁽²⁰⁾.**

Accordingly, this study attempted to assess the level of the overall nursing students' attitude and satisfaction toward blended learning at the time of COVID 19 pandemic. Regarding students' attitude toward blended learning, the present study revealed that all studied students were strongly agree about getting interested when studying online with more than sixty percent of them were agree about study over and over again online. This result may be related to the benefits of studying nursing online as save time and effort for both students and teachers, cost of study is lower a more flexible. Besides that, technology makes it easier to reach out and collaborate with a teacher on materials that students may be struggling to understand in traditional classroom. This results was agreed by Khalilet al.(2020) ⁽²¹⁾, who revealed that the online modality was well-received, and all participants agreed that online sessions were time saving and that their performance was improved due to enhanced utility of time. Also, concluded that online classes were well-accepted by the medical students. On the other hand, this result was opposite with the survey by National Union of students(2020)⁽²²⁾, who surveyed of nearly 4,200 students has found that twenty- seven percent of students did not agree that they have been able sufficiently to access education online.

Regarding the level of nursing students' attitude toward blended learning, the result of this study showed that more than eighty-percent of studied students had positive attitude toward blended learning. This result may be related to the crisis condition of COVID 19 Pandemic which forcing all universities to follow the instructions of Egyptian Ministry of Health to decrease the spread of infection and reduce crowding of students. This made the universities to resort to blended learning as an alternative education method to finish the educational curricula on time according to their study plan.

This result go in the same line with the study of **Aladwanet al. (2018)**⁽²³⁾who mentioned that In general the students have shown positive attitude toward blended learning. Also, **Taghizadehand Hajhosseini (2020)**⁽²⁴⁾mentioned that most learners had positive attitudes to blended learning technology and argued that learning in blended classes happens better than face-to-face ones. This result was not accepted by the study of **Ja'ashan (2015)**⁽²⁵⁾which showed that the students had negative impressions in some points as waste of time, easy cheating and social isolation.

Regarding the studied students' satisfaction toward blended learning, the current study

revealed that the quality of interaction between all involved parties gained forty-percent of students' satisfaction. This results may be related to the variety of interaction means in blended learning, for example (in traditional classroom) they will have their peers sitting right next to them, which lets them work together on course activities inside classroom. In addition to the (online classes) students can interact with peers and teachers via the class message board or forum and other means which reflects good interaction.

This result go in the same line with **Taghizadeh and Hajhosseini (2020)**⁽²⁴⁾who showed that the learners had highest amount of positive response to the items of interactions especially 'they receive enough feedback from their instructors when they need it'and ' The instructor regularly posts some questions for students to discuss on the discussion board'. In addition to **Roff, (2018)**⁽²⁶⁾revealed that the main reason why students want to take blended courses is that it “provides interaction with the instructor.

The present study showed that the majority of studied student (more than ninety percent) were unsatisfied toward blended learning. This result may be related to difficult access to the internet, poor internet infrastructure and its high cost. This turned

out to be the most critical factors in both Web-based and blended learning. This result is opposite with the result of the study hold by **Al Awamleh(2019)**⁽²⁷⁾ and mentioned that students 'satisfaction was generally high with more than Eighty percent and also satisfied about blended program and online learning environment. Regarding the relation between students' sex, last scientific certification and level of attitude the present study revealed no relation between them. This result may be related to there are many factors affect the students' attitudes as experience, knowledge, learner confidence, system access, academic achievement not the gender. This result go in the same line with the finding of **Lake, (2020)**⁽²⁸⁾ who confirmed that many factors such as learners' experiences and knowledge required for using BELS can stimulate learners to be more confident to execute all BELS activities that helps increase learners' positive attitude and performance achievement. Also, the results of **Daset al. (2014)**⁽²⁹⁾ and **Goniet al. (2015)**⁽³⁰⁾ showed that there was no significant difference between boys and girls students in attitude towards education. The result of the current study showed that there is no relation between level of students' satisfaction, sex and scientific

certification. This finding may be related to there are many important factors that can affect the learners' satisfaction in using blended learning as e-learning adaptability, perceived usefulness, in-time of teacher's response, perceived ease of use and course applicability not the sex or scientific certification.

This result go in the same line with **Naji et al. (2012)**⁽¹⁷⁾ who reported no statistically significant differences were found between females and males with respect to the satisfaction on blended learning. On the other hand, this result not matched with the finding of **Al-Fadhli(2008)**⁽³¹⁾ that showed that there is strong significance difference between students' attitude and their gender toward e- learning.

The finding of the current study showed that there is statistically significant weak negative correlation between total attitude score and both age and level of study. This finding may be related to the factors that affect the attitude of students toward blended learning as experience, knowledge, learner confidence, system access, academic achievement not the age. This result go in the same line with the result of **Markovich (2015)**⁽³²⁾ who mentioned that no significant correlations were found between age and the total online learning attitude score

The finding of the recent study revealed that there is non-significant negative weak correlation between attitude total score and satisfaction total score toward blended learning among studied sample. This result not matched with the result of **Giannousiet al. (2010)**⁽³³⁾ who showed that a significant positive correlation between perceived e-learner satisfaction and students' general attitude toward blended learning.

Conclusion

In the light of our study findings, it was concluded that the majority of studied students had positive attitude toward blended learning, also, the majority of them were unsatisfied toward it. There is weak negative correlation attitude total score and satisfaction total score among studied sample. No significant relationship between students' attitude, sex and last scientific certification and no significant relationship between students' satisfaction, sex and last scientific certification.

Recommendation: For faculty Administration

1. Involve blended learning as alternative plan at the time of crisis
2. Improve the infrastructure of internet for effective implementation of blended learning

3. Encourage students for more usage of internet websites to implement all courses activities.
4. Encourage the students to discuss the barriers for using blended learning.
5. Support from administrative authority to deal with the barriers face the implementation of blended learning.

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