Perception of University Nursing Students and Their Basic Psychological Needs in Blended Learning

Nora Nasser Ibrahim [1], **Ghada Mohamed Mourad** [2], **Fatma Ata Abdel-Salihen**[3] **Fatma Mohammed Ibrahim** [4]

[1] Demonstrator of Psychiatric/Mental Health Nursing, Faculty of Nursing Ain Shams University.

[2] Professor of Psychiatric/Mental Health Nursing, Faculty of Nursing Ain Shams University.

[3] Assist. Professor of Psychiatric/Mental Health Nursing, Faculty of Nursing Ain Shams University.

[4] Assist. Professor of Psychiatric/Mental Health Nursing, Faculty of Nursing Ain Shams University

Abstract

Background: Blended learning, which integrates face-to-face and online instruction, is increasingly being adopted. It has the potential to enhance nursing students' satisfaction and competence, independence, and relatedness. **Aim:** This study aimed to assess the perception of university nursing students and their basic psychological needs in blended learning. **Design:** A descriptive relational study design was utilized in this study. **Setting**: This study was carried out at Faculty of Nursing-Ain Shams University. It includes seven scientific departments. **Subjects:** A convenient sample of 159 university nursing students enrolled in fourth academic year (2022-2-23). **Data collection tool:** Data was gathered using the following 1) Structured interview questionnaire to assess university nursing students' demographic data; 2) students' perception on blended learning scale; and 3) basic psychological needs satisfaction scale. **Results:** date analysis shows that the majority of the studied subject had a positive perception of blended learning and its implementation process, also the majority of them had satisfied basic psychological needs regarding relatedness and autonomy and more than two thirds of them had satisfied basic psychological needs regarding competence. There was a highly statistically significant difference between the studied university nursing students' basic psychological needs satisfaction and total level of perception and its implementation process regarding blended learning. There were positive correlations between university nursing students' relatedness, autonomy, competence and, their total perception regarding blended learning. **Conclusions**: University nursing students with satisfied basic psychological needs had a positive perception in blended learning. **Recommendations:** Designing and implementing educational program in the latest advance in blended learning approaches to enhance university nursing students' skills, as well as implementing periodic scientific seminars for university nursing students about strategies to develop basic psychological needs in blended learning.

Keywords: perception, basic psychological needs, blended learning.

Introduction:

Blended learning (BL) refers to the practice of using both online and face-to-face learning experiences when teaching students **(Ashraf, et al., 2022).** This definition encompasses hybrid learning, and flexible learning. Effective integration of traditional classroom teaching with e-learning provides support for asynchronous and cooperative learning among students. Achieving a balance between classroom and online learning is necessary as students still value the face-to-face opportunities to receive feedback in a blended learning setting **(Geng, et al., 2019).**

Blended learning' advantages to university nursing students include facilitating a free platform where students could build knowledge by connecting with one another, provides students with the opportunity to control the time, place, and path of learning. It helps develop planning skills, self-control, self-regulation, competence, autonomy, students can repeat what they have learned. University nursing students can complete assignments at their own pace **(Wang, 2021).** Also support university nursing students learning by incorporating activities of discussion and reflection **(Zhu, 2019; Fan, 2020).**

Moreover, BL offers flexibility for students and lecturers, improves personalization, improves student outcomes, encourages growth of autonomy and self-directed learning, and creates prospects for professional learning **(Rasheed, et al., 2020).** BL seeks to produce a harmonious and coherent

equilibrium between online access to knowledge and traditional human teaching by considering nursing students' attitudes (**Bervell, et al., 2021**).

BL offers access to online resources and information that meet the nursing students' level of knowledge and interest. It supports teaching conditions by offering opportunities for professional collaboration and improve time adeptness of lecturers (**Owston et al. 2019; Guillen-Gamez et al. 2020**). BL facilitates students to study at their own speed, and further organizes nursing students for the future by providing real-world skills (**Ustunel and Tokel 2018**). As pointed out by (**Al-shami et al, 2018**) BL improves social communication in university' communities, improves students' aptitude and self-reliance, increased learning quality, improve critical thinking in learning setting and incorporate technology as an operative tool to convey course contents to students (**Garone, et al., 2022**).

Blended learning not only has the convenience, autonomy, and richness of online learning, but also strengthens the connection between teachers and nursing students (relatedness), so that nursing students can get effective feedback in time. Blended learning can improve nursing students' satisfaction and competence (**O'Brien, et al., 2018**).

Basic psychological needs are a basic need concerning the psychological functioning of human beings. Actions used three concepts: Relatedness concept refers to an individual's desire and need to connect with people, to receive and get friendship, love, care, and affection from each other; Competence concept refers to an individual's need to perceive oneself as effective in human interaction and competent in influencing the physical and social contexts, and hence realize their valuable output through one's own actions; and autonomy concept refers to one's need on self-regulation (**Vansteenkiste, et al., 2020**).

Blended learning seems to be a new means to optimize potential motivational and behavioral benefits for education. In blended learning, using e-learning platforms leads teachers to support students' learning autonomy and is associated with an increase in students'

self-regulated learning (**Menggo, & Darong, 2022**).

The degree of learners' expectations, satisfaction, opinions, or views on courses has played an important role in evaluating the effectiveness of learning processes (**Firdaus, et al., 2020**).

Significance of the study:

The use of technology in education has become necessary and inevitable, because of its positive effects on the teaching and learning process (**Berman & Artino, 2018**).

Many universities are now developing strategies to reduce costs by offering blended learning programs in their adult education programs. Unfortunately, too many institutions take a less integrative approach by only blending nursing education programs (**Rankin, 2022**). Blended learning courses can address issues with the cost of curriculum delivery and flexibility of the academic experience by bringing together traditional face-to-face and computer-mediated methods of instruction delivery. Upwards of 3.97 million individuals are projected to enroll into some form of online or blended learning. Understanding nursing students' perceptions of how web-based technology is being used in the blended environment, individual readiness, and satisfaction with blended courses is a productive and growing area of research (**Dziuban, et al., 2018**).

Recently, there has been much attention paid to the growing blended learning course in Ain shams University. Current efforts have been focused on encouraging university nursing students to use blended courses. Students got appropriate training sessions in how to use and apply all tools and activities.

The study of university nursing students' perceptions and views about blended learning will help teachers to evaluate the teaching-learning process and improve quality learning outcomes while meeting their basic psychological needs.

Aim of study:

The aim of this study was:

to assess the perception of university nursing students and their basic psychological needs in blended learning.

The aim of this study was achieved through assessing:

1) The perception of university nursing students regarding blended learning.

2) The basic psychological needs of university nursing students in blended learning.

3) The relationship between university nursing students'perception and basic psychological needs in blended learning.

This aim was achieved through answering the following questions:

1) What is the perception of university nursing students regarding blended learning?

2) What are the basic psychological needs of university nursing students in blended learning?

3) What is the relationship between university nursing students'perception and basic psychological needs in blended learning?

Subject and Methods

Research design:

A descriptive relational design was used in this study to assess perception of university nursing students and their basic psychological needs in blended learning.

Research setting:

The study was conducted at Faculty of Nursing-Ain Shams University. It includes seven scientific departments, namely, medical surgical nursing department (I, II), critical and emergency nursing department, maternity and neonate nursing department, pediatric nursing department, geriatric health nursing department, family and community health nursing department, psychiatric/mental health nursing department, and nursing administration department.

Subjects of the study:

A convenient sample of 159 university nursing students. Sample size was estimated according to the following equation. (Krejcie, & Morgan, 1970).

$$= \frac{(X^2 \times N) \times P\,(1\text{-}P)}{(d^2\,(N\text{-}1) + (X^2 \times P\,(1\text{-}P)}$$

Tools for data collection:

The tools used for data collection were:

I.   Structured interview questionnaire:

It was designed by researcher to assess demographic characteristics of nursing students, including age, sex, residence, marital status, pre-university education, computer literacy, availability of internet at home, Source of internet, and do you have training in the use of blended learning methods?

II. Students' perception in blended learning scale:

It was developed by **(Akkoyunlu, & Soylu, 2008)**, and adopted by the researcher, to assess students' perception of blended learning and its implementation process. This scale is a valid = 0.545, and reliable = 0.78, **(Figl, et al., 2005).** It includes 50 items each item is rated on a five-point Likert Scale in which 1= Strongly Disagree, 2= Disagree, 3= neutral, 4= agree and 5= strongly agree. While reversed scored statement (38, 40, 47 and 48) in which 1= Strongly agree, 2= agree, 3= neutral, 4= Disagree and 5= strongly Disagree.

It includes two parts as following:

1-Learners' perception on blended learning's implementation (35 items): ease of use for web environment (7 items), on-line environment (6 items), content (11items), face to face sessions (7 items) and assessment (4 items).

2-Learners' perception on blended learning in general (15 items).

Total scores range from 50 – 250.

scoring for Students' perception in blended learning scale scoring (50 items):

Concepts of basic psychological needs satisfaction scale	Items	Unsatisfied basic psychological needs	Satisfied basic psychological needs
1- Relatedness.	8	8:32	32.1:56
2Competence.	6	6:24	24.1:42
3- Autonomy	7	7:28	28.1:49
Total level of satisfaction	21	21:84	85:147

Parts	Items	Negative perception	Positive perception
1- Students' perception in blended learning's implementation.	35	35:119	120:175
a-Ease of use for web environment.	7	7: 23.8	23.9:35
b-On-line environment.	6	6:20.4	20.5:30
c-Content.	11	11:37.4	37.5:55
d-Face to face sessions.	7	7: 23.8	23.9:35
e-Assessment.	4	4:13.6	13.7:20
2- Students' perception in blended learning in general.	15	15:51	51.1:75
Total level of perception	50	(50:170)	(171:250)

II. Basic psychological needs satisfaction scale: It was developed by **(Deci et al., 2001)** and adopted by the researcher to investigate students perceived psychological fulfilment in relations to blended learning. This scale is valid = 0.70 **(Moerdyk, 2015),** and reliable (**Gagné 2003**) Cronbach's alpha values are .69, .71, and .86 for autonomy, competence, and relatedness, respectively.

- **It includes 21-item consists of three concepts including:**
    1-Relatedness (8 statements)
    2-Competence (6 statements)
    3-Autonomy (7 statements)

❖ **Scoring system for basic psychological needs satisfaction scale.**

The questionnaire is rated on a seven-point rating scale in which (1 = No opinion, 2= Strongly disagree, 3= disagree, 4 = somewhat disagree, 5= somewhat agree, 6= agree, while 7 = Strongly agree). While reversed scored statement (3, 7, 11, 13, 16, 17.and 18) in which (1 = Strongly agree, 2= agree, 3= somewhat agree, 4 = somewhat disagree, 5= disagree, 6= Strongly disagree, while 7 = No opinion).

Total scores range from 21 -147.

Pilot Study

The pilot study was conducted on 10% (16 students) of the total sample of university nursing students registered in the fourth academic year (2022 – 2023). In the middle of November 2022 to evaluate and test the simplicity, applicability, and feasibility of the research tools, to estimate the time needed to collect data. According to the results of the pilot study, no modifications were made in the tools, and the pilot study was included in the study sample.

Field work
First step:

The researcher obtained approval from the dean of the Faculty of Nursing - Ain shams university, heads of departments (geriatric health nursing department, family and community health nursing department, and psychiatric/ mental health nursing department), and clinical coordinators responsible for students during the clinical period to collect data.

Confidentiality of any obtained information was assured, and the subjects were informed about their right to participate or not in the study. The subjects were also assured about anonymity, and that data will only be used for the purpose of the study.

Second step:

At the end of the clinical day, the researcher obtained permission from the clinical coordinator and practical staff to collect the data from students at faculty.

Before starting the data collection, the researcher met with university nursing students at Faculty of Nursing, Ain Shams University in well ventilated, quiet as possible and adequate space then introducing myself and explained the nature and purpose of the study to gain their oral approval and cooperation.

Data collection tools were distributed between students at Faculty of Nursing, Ain Shams University and they were asked to fill them individually. Instructions were then given as to how to answer each questionnaire and what details had been administered and an explanation of what had been measured would be given to them. Time was given for questions to be asked.

It was emphasized that there should be no talking or consultation with their classmates during the administration of the test "every attempt was made to provide ample spacing between respondents and their peers to keep their responses as private as possible. Respondents were also asked not to discuss or share their responses with anyone".

Data was collected daily for 1 day/week (Tuesday) during afternoon (12.00 p.m:2.00 p.m.) for 30-40 minutes at Faculty of Nursing, Ain Shams University.

The study was conducted in Faculty of Nursing - Ain shams university. Through the place that was well ventilated, quiet as possible and had adequate spacing for filling the interview questionnaire.

Third step:

Once the questionnaires had been completed and collected, an explanation of what had been measured was given and assurances were given that a report back on the results would be given once the research had been completed. Lastly, after finishing lots of thanks were given to students, teachers, and faculty authorities for their co-operation.

Ethical considerations:

After securing official requirements for carrying out the study, approval of the Scientific Research Ethics Committee was obtained. The university nursing students were informed that they are allowed to participate or not in this study and that they have the right to withdraw from the study at any time. Oral consent was taken from each student to participate in the study. The researcher explained the objectives and nature of this study to the university nursing students included in the study. The researcher

assured maintaining anonymity and confidentiality of the subject data with reassurance about of the information given and that it will be used for scientific research only.

IV. Statistical design:

The statistical analysis of data was done by using the computer software of Microsoft Excel Program and Statistical Package for Social Science (SPSS) version 20. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. Qualitative variables were compared using chi square test $(X)^2$, P-value to test association between two variables and Pearson correlation test (r- test) to test the correlation between the study variables.

Degrees of significance of results were considered as follows:
- P-value > 0.05 Not significant (NS).
- P-value ≤ 0.05 Significant (S).
- P-value ≤ 0.001 Highly Significant (HS).

Results:

Table (1): shows that less than two thirds (64.8% & 63.5%) of the studied university nursing students their age were female, and their age was 21 years old, respectively. Their mean age is 21.4 ± .55 years. As regards marital status, the majority (90.6%) of the studied university nursing students were single, Also, more than half (59.7%) of them were residing in urban areas. Regarding pre-university education, it was found that the majority (91.2%) of them finished general secondary school. Also, less than three quarters (73.0%) of the studied university nursing students had good computer literacy, the majority (96.9%) of them had availability of internet at home. As regards sources of internet and training in the use of blended learning methods, more than three quarters and the majority (75.5% & 93.7%) of them had Wi-Fi and had trained in the use of blended learning methods, respectively.

Table (2): shows frequency distribution of the studied university nursing students according to total perception in blended learning, the majority and less than two thirds (83.0%, 83.0%, 88.7%, 85.5%, 84.3 & 64.8%)

of them had a positive perception regarding the ease of use for web environment, on-line environment, content, face-to-face sessions, assessment, and learners' perception on blended learning in general, respectively.

Figure (1): shows that the majority (87%) of the studied university nursing students had a positive perception of blended learning and its implementation process, while only (13%) of them had negative perception.

Table (3): shows the studied university nursing students according to basic psychological needs satisfaction in blended learning as the majority and more than two thirds (95.0%, 94.3% & 67.3%) of them had satisfied basic psychological needs regarding relatedness, autonomy, and competence, respectively.

Figure (2): shows that the majority (94.4%) of the studied university nursing students had satisfied basic psychological needs in blended learning, while only (5.6%) of them had unsatisfied basic psychological needs in blended learning.

.

Table (4): illustrates that there was a highly statistically significant relation between the studied university nursing students' basic psychological needs satisfaction and their levels of perception and its implementation process regarding blended learning in which $X^2 = 209.4$ at $p = 0.000$.

Table (5): shows that there were positive correlations between university nursing students' relatedness, autonomy, competence and, their perception and its implementation process regarding blended learning which r= .805, .682 & .419 at p= <0.01, respectively.

Table (1): Frequency distribution of the studied university nursing students according to their demographic data (n=159).

Items		No.		%
Sex:				
- Male		56		35.2
- Female		103		64.8
Age:				
- 21 years old.		101		63.5
- 22 years old.		53		33.3
- 23 years old.		5		3.1
Mean ±SD	**21.4 ± .55**			
Marital status:				
- Single		- 144	-	90.6
- Married		- 15	-	9.4
Residence:				
- Urban		- 95	-	59.7
- Rural		- 64	-	40.3
Pre-university education:				
- General secondary school		- 145	-	91.2
- Nursing school diploma		- 11	-	6.9
- Technical institute diploma		- 3	-	1.9
Computer Literacy:				
- Weak		- 21	-	13.2
- Good		- 116	-	73.0
- Excellent		- 22	-	13.8
Availability of internet at home:				
- yes		- 154	-	96.9
- No		- 5	-	3.1
Source of internet:				
- Wi-Fi		- 120	-	75.5
- Mobile data		- 34	-	21.4
- Telephone line		- 5	-	3.1
Do you have training in the use of blended learning methods?				
- Yes		- 149	-	93.7
- No		- 10	-	6.3

Table (2): Frequency distribution of the studied nursing students according to their perception in blended learning implementation (n = 159).

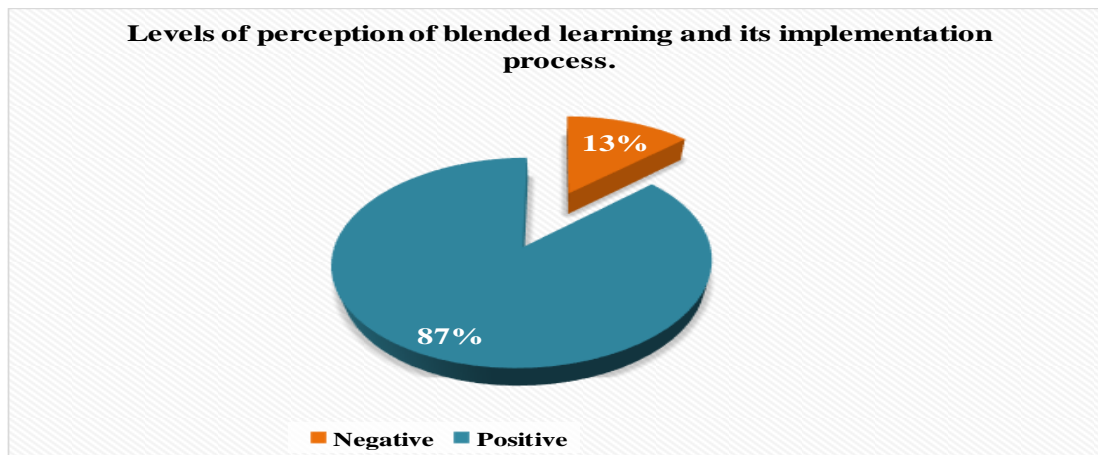| Learners' perception in blended learning's implementation	Negative perception		Positive perception		Mean ± SD
	No.	%	No.	%	
Ease of use for web environment	27	17.0	132	83.0	27.08 ± 4.79
On-line environment	27	17.0	132	83.0	23.30 ± 3.82
Content	18	11.3	141	88.7	42.94± 6.81
Face to face session	23	14.5	136	85.5	27.44± 4.50
Assessment	25	15.7	134	84.3	15.70± 2.47
Blended learning in general	56	35.2	103	64.8	52.00 ± 7.41

Figure (1): Frequency distribution of the studied university nursing students according to their level of perception and its implementation process in blended learning **(n=159).**

Table (3): Frequency distribution of basic psychological needs satisfaction of the studied university nursing students in blended learning (n = 159).

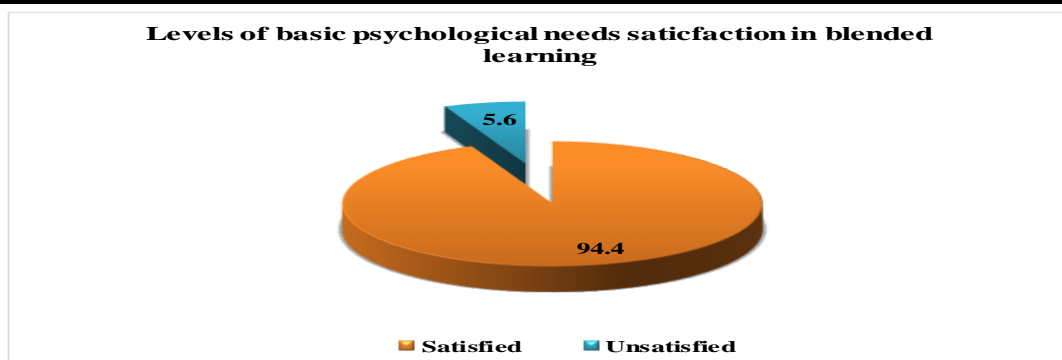| Basic psychological needs satisfaction	unsatisfied		Satisfied		Mean ± SD
	No.	%	No.	%	
Relatedness	7	5.0	152	95.0	106.48± 15.73
Autonomy	9	5.7	150	94.3	11.50 ± 1.61
Competence	52	32.7	107	67.3	29.46± 2.02

Figure (2): Frequency distribution of the studied university nursing students according to their level of basic psychological needs satisfaction in blended learning **(n=159).**

Table (4): Relation between the studied university nursing students' basic psychological needs satisfaction levels and their perception levels in blended learning **(n=159).**

Variables		Levels of total perception				X^2	P-Value
		Positive perception (n= 138) - (87 %)		Negative perception (n= 21) - (13 %)			
		No.	%	No.	%		
Levels of basic psychological needs satisfaction	Satisfactory (n= 150) (94.4 %)	137	86.2	13	8.2	209.4	0.000**
	Unsatisfactory (n= 9) (5.6 %)	1	0.6	8	5		

No significant at p > 0.05. * Statistically significant at p ‹ 0.05. **Highly statistically significant at p ‹ 0.001.

Table (5): Correlation between the studied university nursing students' perception in blended learning and their basic psychological needs satisfaction (relatedness, autonomy, and competence in blended learning **(n=159).**

Variables	learners' perception	
	r	p-value
Relatedness	.805	0.000**
Autonomy	.682	0.000**
Competence	.419	0.000**

r= correlation coefficient test.   P= p-value   **highly significant at p ‹ 0.001.

Discussion:

Higher educational institutions are under increasing demands to deploy innovative technology-mediated educational advances to accommodate various student academic needs. One such initiative is blended learning which is a new education method that combines face-to-face traditional learning with online learning **(Kang and Seomun, 2018).** Blended learning not only has the convenience, autonomy, and richness of online learning, but also strengthens the connection between teachers and students, so that students can get effective feedback in time. Blended learning can improve nursing students' satisfaction and competence **(O'Brien, et al., 2018).**

Regarding demographic of the studied subject, the result of the present study displayed that less than two thirds of the studied university nursing students their age was 21 years old, and they were female. Also, the majority of them were single and finished general secondary education as pre university education. Also, more than half of them were residing in urban areas. Also, less than three quarters of them had good computer literacy.

From the researcher's point of view that is the average age in the fourth academic year =21years old over the years and they are not married because it is customary to support marriage after completing studies. and because nursing is a profession that attracts females more.

A similar finding was consistent with three studies, the first study was conducted by **Atef Mohammed Talha, et al., (2023**) who studied" Perception of Geriatric Nursing Students regarding Blended Learning" and showed that half of the geriatric nursing students aged 21 years old and less than three quarters of them were females, and the majority of them were single. In addition, a similar second study finding by **McCutcheon, et al., (2018)** who conducted a study entitled "Online Learning versus Blended Learning of Clinical Supervisee Skills with Pre-registration Nursing Students: A Randomized Controlled Trial: A Quasi-Experimental Study" and stated that participants were mainly female between the ages of 18 to 24 years old. Moreover. Third supported study by **Pham, et al., (2019)** who conducted a study entitled "Does E-Learning Service Quality Influence E-Learning Student

Satisfaction and Loyalty?" Evidence from Vietnam" and mentioned that the majority of students were single.

Regarding sources of internet and training in the use of blended learning methods, the result of the present study displayed that the majority of them had the internet at home (Wi-Fi) and had trained in the use of blended learning methods.

From the researcher point of view nowadays, there is internet access available in most homes in addition to faculty of nursing – Ain shams university provided mobile data cards supported with internet access to undergraduate students, especially during the COVID - 19 pandemic to support their distant online learning.

A similar finding was consistent with **Moustafa Elpasiony, et al., (2021)** who conducted a study entitled "Nursing Students' Perception toward Shifting to Online Learning during the COVID-19 Pandemic at Urgent and Planned Situations" revealed that two-thirds of the urgent group and majority of planned group had Internet access (Wi-Fi).

However, the present study finding was contraindicated with **Atef Mohammed Talha, et al., (2023)** who reported that many geriatric nursing students lived in rural areas. Also, the finding was disagreed with **Du Tran, & Nguyen, (2023)** who conducted a study entitled "Perceptions and Attitudes towards Blended Learning for English Courses" and reported that less than two thirds of them did not get sufficient training and guidance in the use of blended learning.

Regarding university nursing students' perception in blended learning and its implementation process, the present study results showed that the majority of the studied university nursing students had a positive perception in blended learning's implementation and overall subscale and more than two thirds of them had a positive in blended learning in general.

This can be due to the widespread revolution of information and communication technology specifically for the internet technology among the new generations. Also, the faculty of nursing efforts as well as e-learning unit made blended learning easy for students by providing information and efficient training on how to use the electronic platform through educational videos, and the practical training and implementation of blended learning for nursing students at the university enables nursing students to prepare for their coursework and provides more time for the application of different activities, as well as opportunities for discussion to facilitate better understanding of the subject during the academic term.

This result like a study conducted by **Roqobih, & Ambarwati, (2020)** that entitled "Implementation of Blended Learning Using Schoology on The Topic of Invertebrate to Improve Student Learning Outcomes" and reported that when the students' perception about the sub-dimensions of the blended learning model were examined, it was seen that (face-to-face environment, assessment, ease of use of the web environment, content, and online environment) were positive at a "high" level. Also, this result was supported with **Widodo, et al., (2020)** who conducted a study entitled "Online learning readiness during the COVID-19 pandemic" and showed that students who had a positive perception towards online learning, study management, online interaction, and learning flexibility were more likely to adapt to blended learning. The more positive perception, the more adaptable the students will be and the more ready they are for blended learning.

This finding was in the same line with a study conducted in India by **Saravanakumar et al., (2022)** who study Perception of Learning Management System Among Distance Learners in India and revealed that the majority of the studied sample have high perception and satisfaction regarding learning management system. Moreover, this result was also supported by **Chen, et al., (2020)** who conducted a study entitled "Blended Learning in Basic Medical Laboratory Courses Improves Medical Students' Abilities in Self-Learning, Understanding, and Problem Solving "and showed that three quarters of students held the opinion that the blended laboratory courses were more effective in accomplishing the skill and knowledge goals of laboratory courses.

However, the finding was disagreed with **Hassan, (2015),** who conducted a study entitled "Perceptions and Attitudes towards Blended Learning for English Courses: A Case Study of Students at University of Bisha" and reported that students had a negative perception towards blended learning compared to traditional classroom learning.

This finding was in the same line with **(Torrisi-Steele, (2023)** who conducted a study entitled "Facilitating Conditions for Hybrid Teaching among Academics" and mentioned that students would not want to continue their education solely with traditional face-to-face learning environments or with a purely online learning environment, and the majority of them had a positive perception on blended learning in general. In addition, a similar finding was consistent with two studies, the first study was conducted in the English Education Department of Universitas Kristen Indonesia Jakarta by **Pardede, (2019)** who study Pre-Service EFL Teachers' Perception of Blended Learning, and reported that more than two-thirds of the studied sample was a positive perception of blended learning in general.

Regarding basic psychological needs satisfaction in blended learning of the studied university nursing students, the present study results showed that the majority of the studied university nursing students had satisfied basic psychological needs regarding relatedness and autonomy. Also, more than two thirds of them had satisfied basic psychological needs regarding competence). In general, the majority of them satisfied basic psychological needs in blended learning.

From the researcher's point of view, providing educational videos about the course material to students and allowing them to access them outside of class time may have enabled them to study independently in a comfortable and quiet environment. Also, this result may be due to students being motivated and engaged in their learning when they believe that they have choices and some freedom within their learning environment. In addition, nursing students had the freedom to express their ideas and opinions, as well as they had the variety of interaction with teachers and other nursing students through different synchronous and asynchronous models such as forums, chats, and Microsoft Teams and blended learning approach that helped them to get along with other nursing students at faculty and studied together to be their friends.

This result was supported with **Bayu, & Saputra, (2023)** who performed study entitled "EFL Undergraduate Students' Competence, Relatedness, and Autonomy in Online Learning: A Self-Determination Perspective " and showed that undergraduate students had a satisfied of relatedness in an online learning environment, had a satisfied of competence in online learning mode, while autonomy among undergraduate students in an online learning environment was rated as moderate.

This finding was in the same line with two studies, first study by **Hafeez, & Akhter, (2021)** who conducted a study entitled "Effects of Blended Learning in Comparison of Traditional Learning to Provide Safer Learning Environment-A Comparative Review" to describe and to explore the effectiveness and impact of an Academic English Writing course in blended learning environment concerning course design, material development and presentation, assignment submission and grading, student involvement, teacher reflection, and student evaluation. And indicated that blended learning has increased the interaction between students and between students and teachers and enhances communication and interaction outside the classroom.

This result was supported with **Jowsey, et al., (2020)** who performed a study entitled "An international exploration of blended learning use in pre-registration nursing and midwifery education " and revealed that blended learning helped nursing and midwifery create confidence and skills mastery, promotes independent learning, and bridges the gap between theory and practice.

Whenever, the finding was contraindicated with **Dakhi, et al., (2020)** who performed a study entitled "Blended learning: a 21st century learning model at college" and stated that interaction among students in this

course was low. This may be a result of the course design, computer literacy, and a balance of intrinsic and extrinsic motivation factors. Also, this disagreement may be due to the students don't have intrinsic and extrinsic motivation towards using blended learning, limited resources (as weak internet connection), and lacking personal preference.

The present study findings were inconsistent with **Abdullah, et al., (2019)** who conducted a study entitled "Nursing Students' Perspective of Metacognition Competency, Self-Regulation, and Problem-Based Learning Strategy" and illustrated that more than half of the nursing students had low levels of competence and self-regulation.

According to Relation between basic psychological needs satisfaction of studied university nursing students in blended learning, and their total perception in blended learning, the present study results illustrated that there was a highly statistically significant difference between the studied university nursing students' basic psychological needs satisfaction and total level of perception and its implementation process regarding blended learning. Also, there were positive correlations between university nursing students' relatedness, autonomy, competence and, their total perception regarding blended learning.

These results might be due to the university nursing students had a positive perception regarding blended learning and satisfied basic psychological needs because the majority of them have availability of internet and training in the use of blended learning methods. Also, they have Wi-Fi and good computer literacy. These factors facilitate the learning process through blended learning. In addition, the lecturer encourages nursing students to feel very competent when they are assigned a task and feel a sense of accomplishment from studying by rewarding them when interacting through synchronous and asynchronous methods.

In the same line with **Hsu, et al., (2019),** who conducted a study entitled" Reexamining the impact of self-determination theory on

learning outcomes in the online learning environment." and reported that there were positive correlations have been found between learner basic psychological needs and satisfaction and frequency of online interactions in blended learning.

This result was supported by **Hsu and Hsieh, (2014),** who conducted a study entitled "Factors affecting metacognition of undergraduate nursing students in a blended learning environment" and reported that there were positive correlations have been found between learner basic psychological needs and satisfaction and frequency of online interactions in BL.

Conclusion:

Based on the results of the present study and research questions, the following can be concluded:

1. University nursing students had a positive perception and satisfied basic psychological needs in blended learning.

2. There were positive relations between university nursing students' basic psychological needs and their total perception in blended learning as university nursing students with satisfied basic psychological needs had a positive perception in blended learning.

Recommendations:

Based upon the results of the current study, the following recommendations were suggested:

1. Implementing periodic scientific seminars for university nursing students about strategies to detect and achieve basic psychological needs satisfaction in blended learning.
2. Further qualitative studies to assess perception of university nursing students and their basic psychological needs satisfaction in blended learning.
3. Designing and implementing educational program in the latest advance in blended learning approach to enhance university nursing students' skills.
4. Developing blended learning strategies to keep pace with technological advancements and meet the basic psychological needs of

undergraduate nursing students, as well as enhancing students' skills to benefit from blended learning.

References:

Abdullah Mohamed, H., Abdel Hamid Mohamed, A., & ELsaid ELsabahy, H. (2019). Nursing Students' Perspective of Metacognition Competency, Self-Regulation, and Problem-Based Learning Strategy. Egyptian Journal of Health Care, 10(4), 445-458.

Akkoyunlu, B., & Soylu-Yilmaz, M. (2008). Development of a scale on learners' views on blended learning and its implementation process. The Internet and Higher Education, 11(1), 26-32.

Ashraf, M. A., Mollah, S., Perveen, S., Shabnam, N., & Nahar, L. (2022). Pedagogical applications, prospects, and challenges of blended learning in chinese higher education: a systematic review. Frontiers in psychology, 12, 6212.

Atef Mohammed Talha, Z., Sobhy Abd El-Aziz, M., Fathy Mohy El-Deen, H., & Gamal Eldein Ibraheim, S. (2023). Perception of Geriatric Nursing Students regarding Blended Learning. Journal of Nursing Science Benha University, 4(1), 519-531.

Bayu, D., & Saputra, E. (2023). EFL Undergraduate Students' Competence, Relatedness, and Autonomy in Online Learning: A Self-Determination Perspective. Journal of Language, Literature, and English Teaching (JULIET), 4(1), 1-9.

Berman, N. B., & Artino, A. R. (2018). Development and initial validation of an online engagement metric using virtual patients. BMC Medical Education, 18(1), 1-8.

Bervell, B., & Umar, I. N. (2018). Utilization Decision towards LMS for Blended Learning in Distance Education: Modeling the Effects of Personality Factors in Exclusivity. Knowledge Management & E-Learning, 10(3), 309-333.

Chen, J., Zhou, J., Wang, Y., Qi, G., Xia, C., Mo, G., & Zhang, Z. (2020). Blended learning in basic medical laboratory courses improves medical students' abilities in self-learning, understanding, and problem solving. Advances in physiology education, 44(1), 9-14.

Dakhi, O., JAMA, J., & IRFAN, D. (2020). Blended learning: a 21st century learning model at college. International Journal of Multi Science, 1(08), 50-65.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country: A cross-cultural study of self-determination. Personality and social psychology bulletin, 27(8), 930-942.

Du Tran, T., & Nguyen, M. N. A. (2023). Perceptions and Attitudes towards Blended Learning for English Courses: A Case Study of English-majored Students at Thu Dau Mot University. AsiaCALL Online Journal, 14(1), 40-60.

Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., & Sicilia, N. (2018). Blended learning: the new normal and emerging technologies. International journal of educational technology in Higher education, 15, 1-16.

Fan, G. (2020). Changes in Educational Institutions in China: 1978–2020: Analysis of Education Policies and Legal Texts from a National Perspective. Handbook of Education Policy Studies: Values, Governance, Globalization, and Methodology, Volume 1, 111-129.

Figl, K., Derntl, M., & Motschnig, R. (2005). "Assessing the added value of blended learning: An Experience-based survey of research paradigms." Proceedings of

Interactive Computer Aided Learning, Villach, Austria.

Firdaus, F., Muntaqo, R., & Trisnowati, E. (2020). Analysis of student readiness for blended learning model implementation in industrial era 4.0. Indonesian Journal of Science and Education, 4(1), 48-56.

Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. Motivation and emotion, 27, 199-223.

Garone, A., Bruggeman, B., Philipsen, B., Pynoo, B., Tondeur, J., & Struyven, K. (2022). Evaluating professional development for blended learning in higher education: a synthesis of qualitative evidence. Education and Information Technologies, 27(6), 7599-7628.

Geng, S., Law, K. M., & Niu, B. (2019). Investigating self-directed learning and technology readiness in blending learning environment. International Journal of Educational Technology in Higher Education, 16(1), 1-22. https://doi.org/10.1186/s41239-019-0147-0.

Guillen-Gamez, F. D., Mayorga-Fernández, M. J., & Del Moral, M. T. (2020). Comparative research in the digital competence of the pre-service education teacher: face-to-face vs blended education and gender. Journal of e-Learning and Knowledge Society, 16(3), 1-9.

Hafeez, M., & Akhter, Y. (2021). Effects of Blended Learning in Comparison of Traditional Learning to Provide Safer Learning Environment-A Comparative Review. International Journal of Educational Research and Social Sciences (IJERSC), 2(6), 1604-1615.

Hassan Ja'ashan, M. M. N. (2015). Perceptions and attitudes towards blended learning for English Courses: A case study of students at University of Bisha. English Language Teaching, 8(9). https://doi.org/10.5539/elt.v8n9p40.

Hsu, L. L., & Hsieh, S. I. (2014). Factors affecting metacognition of undergraduate nursing students in a blended learning environment. International Journal of Nursing Practice, 20(3), 233-241.

Hsu, H. C. K., Wang, C. V., & Levesque-Bristol, C. (2019). Reexamining the impact of self-determination theory on learning outcomes in the online learning environment. Education and information technologies, 24, 2159-2174.

Jowsey, T., Foster, G., Cooper-Ioelu, P., Jacobs, S., (2020). Blended learning via distance in pre-registration nursing education: a scoping review. Nurse Educ. Pract. 44, 102775.

Kang, J., & Seomun, G. (2018). Evaluating web-based nursing education's effects: a systematic review and meta-analysis. Western Journal of Nursing Research, 40(11), 1677-1697.

McCutcheon, K., O'Halloran, P., Lohan, M., (2018). Online learning versus blended learning of clinical supervisee skills with pre-registration nursing students: a randomized controlled trial. Int. J. Nurs. Stud. 82, 30–39. https://doi.org/10.1016/j.ijnurstu. 2018.02.005.

Menggo, S., & Darong, H. C. (2022). Blended learning in ESL/EFL class. LLT Journal: A Journal on Language and Language Teaching, 25(1), 132-148.

Moerdyk, A. (2015). The principles and practice of psychological assessment. Hatfield, South Africa: Van Schaik.

Moustafa, Elpasiony, N., Gouda Ahmed Abd-Elmoghith, N., & Rady Sobh, H. (2021). Nursing Students' Perception toward Shifting to Online Learning during the COVID-19 Pandemic at Urgent and Planned Situations. Egyptian Journal of Health Care, 12(3), 876-890.

O'Brien, D., Knowlton, M., & Whichello, R. (2018). Attention health care leaders:

Literature review deems baccalaureate nurses improve patient outcomes. Nursing education perspectives, 39(4), E2-E6.

Owston, R., York, D., & Malhotra, T. (2019). Blended learning in large enrolment courses: Student perceptions across four different instructional models. Australasian Journal of Educational Technology, 35(5), 29-45. https://doi.org/10.14742/ajet.4310.

Pardede, P. (2019). Pre-Service EFL Teachers' Perception of Blended Learning. Journal of English Teaching, 5(1), 1-14.

Pham, L., Limbu, Y.B., Bui, T.K., Nguyen, H.T. and Pham, H.T. (2019), "Does e-learning service quality influence e-learning student satisfaction and loyalty? Evidence from Vietnam", International Journal of Educational Technology in Higher Education, Vol. 16 No. 1, p. 7.

Rankin, R. D. (2022). The Relationship between Students' Perceptions of the Blended Learning Environment and Academic Achievement: A Quantitative Study (Doctoral dissertation, Northcentral University).

Rasheed, R. A., Kamsin, A., & Abdullah, N. A. (2020). Challenges in the online component of blended learning: A systematic review. Computers & Education, 144, 103701.

Roqobih, F. D., & Ambarwati, R. (2020). Implementation of blended learning using schoology on the topic of invertebrate to improve student learning outcomes. Journal Inovasi Pembelajaran Biologi, 1(1), 24-34.

Saravanakumar, A. R., Parashar, N., Sahana, S., Baskaran, D., & Sundaram, K. (2022). Perception of learning management system among distance learners in India. Journal of Positive School Psychology, 6(2), 3738-3748.

Torrisi-Steele, G. (2023). Facilitating Conditions for Hybrid Teaching Among Academics. In Handbook of Research on Andragogical Leadership and Technology in a Modern World (pp. 341-357). IGI Global.

Ustunel, H. H., & Tokel, S. T. (2018). Distributed scaffolding: Synergy in technology-enhanced learning environments. Technology, Knowledge, and Learning, 23, 129-160.

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). Basic psychological need theory: Advancements, critical themes, and future directions. Motivation and emotion, 44, 1-31.

Wang, N., Chen, J., Tai, M., & Zhang, J. (2021). Blended learning for Chinese university EFL learners: Learning environment and learner perceptions. Computer Assisted Language Learning, 34(3), 297-323.

Widodo, S. F. A., Wibowo, Y. E., & Wagiran, W. (2020, December). Online learning readiness during the Covid-19 pandemic. In Journal of Physics: Conference Series (Vol. 1700, No. 1, p. 012033). IOP Publishing.

Zhu, Y. (2019). New national initiatives of modernizing education in China. ECNU Review of Education, 2(3), 353-362. doi: 10.1177/2096531119868069.