

Factors Impacting Nursing Students Blended Learning Readiness: A Cross-sectional Study

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ABSTRACT

OBJECTIVE: To investigate the factors related to student's readiness for blended learning among nursing students.

METHOD: The study used a non-experimental quantitative research design with a cross-sectional approach. Data were gathered from 358 first-year students using a total sampling technique. A set of questionnaires from a previous study was administered to collect pertinent information regarding students' readiness for the blended learning method. Data was collected using an online survey. Data analysis employed univariate data analysis.

RESULTS: The classroom learning factor exhibited the highest overall average value (3.29), whereas online interaction had the lowest overall average value (2.81) in the same category. These students have a moderately elevated level of preparedness.

CONCLUSION: Students are being encouraged to enhance their preparation for blended learning. A forthcoming study may analyze the correlation between classroom learning and online interaction factors influencing nursing students' blended learning readiness, focusing on the highest and lowest factors.

KEYWORDS: Blended learning, Factors, Learning readiness, Nursing, Students

INTRODUCTION

The learning method is a plan used as a guideline for the learning process. The blended learning method combines the advantages of face-to-face or conventional learning with online virtual learning (e-learning)¹. Blended learning integrates the benefits of face-to-face and online instruction to help students become better prepared for learning, provide practical and realistic opportunities for teachers and students to learn independently, and increase student flexibility².

Readiness is one of the prerequisites for someone to be able to learn. Learning preparedness is a learner's entire condition that prepares him to respond to the learning process³⁻⁵. Sriwichai (2020)⁴ investigated seven factors that affect blended learning readiness: classroom learning, online learning, online interaction, technology, learning flexibility, learning management, and readiness for blended learning. The results showed that online learning had the lowest average score of the six variables. If given the chance, students would choose classroom learning over online learning and assumed that respondents could be unprepared and uncomfortable with online learning, which demands independent learning.

New students will be affected by the above learning readiness studies. New students are adjusting to college life. They must adapt to campus settings and the learning system⁵. They adapt more when the campus system and course materials become more

sophisticated. New nursing students who learn via theory and practice to aid others will feel moderate stress that can impair their education and practice. Their first clinical practicum causes tension and anxiety because of fear of making mistakes, lack of clinical nurse assistance, and contradictions between classroom theory and clinical practice.

The Faculty of Nursing at one private university in West Indonesia implemented blended learning for first-year anatomy and physiology students. Mixed learning, with 37.5% face-to-face, 50% online, and 12.5% evaluation implementation in 16 meetings, is used in this course. Twenty-four first-year nursing students at one private university in West Indonesian were surveyed. Interviews assessed students' computer confidence, social media distractions, repeated learning, and midterm anatomy and physiology exam scores. Computer use confidence was 75%. Boredom, application notifications, and inattention distracted 88% of online students. More than half of midterm exam scores were below the passing threshold, while 21% were above. 46% reported they didn't repeat learning materials outside class study hours related to time constraints and various tasks.

The researcher experienced challenges during blended learning, particularly in online learning, where initial issues included accessing the software and comprehending the functionalities of the utilized device. During the lecture, researchers encountered challenges, specifically the infrequency of discussions in extensive courses, which inhibited them from presenting questions to the lecturer and being perceived by their peers. The researcher intends to

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investigate the characteristics that affect blended learning preparedness among nursing students.

METHODOLOGY

A descriptive quantitative study was conducted. The study evaluated nursing students' blended learning preparatory characteristics. The sample consisted of 358 first-year nursing students from one private university in West Indonesia. The current investigation used total sampling.

Data collection followed an ethical review and study approval from the dean of one private university in West Indonesia. After authorization, researchers distributed Microsoft Form links to research information, informed consent, and questionnaires from March 15 to April 16, 2024, with 10–15-minute filling times.

An instrument from previous research⁴ with 25 valid questions has Cronbach's alpha (0.903) > 0.60 in our investigation. The instrument has seven components: classroom learning, online learning, online interaction, technology, learning flexibility, learning management, and readiness for blended learning. The measurement findings are as follows: 3.76-4.00 = high, 2.76-3.75 = slightly high, 1.76-2.75 = slightly low, and 1.00-1.75 = low. Descriptive statistics were calculated, including frequencies, means, medians, and standard deviations. Informed consent was obtained from the nursing students, who maintained respondents' privacy and data confidentiality.

RESULTS

The following table shows sample demographics. Of 323 respondents, 323 (90.2%) are female, and 187 (52.2%) are young. (Table I)

Table I: Demographic data distribution (n=358)

Characteristics		Frequency	Percentage
Gender	Male	35	9.8
	Female	323	90.2
Age (Years)	17	16	4.5
	18	171	47.8
	19	126	35.2
	20	38	10.6
	21	6	6
	22	1	0.3
TOTAL		358	100

Table II presents seven student preparedness factors. Overall, the mean scores were relatively high. Classroom learning had the highest mean score ($x=3.29$, $SD=0.41$), followed by Learning flexibility and Technology factors. The lowest mean score was reported in Online interaction ($x=2.81$, $SD=0.37$).

Table III: Exhibits the students' readiness based on the Questionnaire. One item had a slightly low mean,

while 24 things had a slightly high mean. No. 1 Anatomy and Physiology face-to-face class activities help me prepare for online learning had the highest mean ($x=3.34$, $SD=0.50$), while No. 8, I can decide where and when I want to study Anatomy and Physiology course materials, had the lowest mean ($x=2.56$, $SD=0.59$).

Table II: Seven Components of Student Readiness (n=358)

Factors	x	SD	Description
Classroom Learning	3.29	0.41	slightly high
Online Learning	2.87	0.54	slightly high
Online Interaction	2.81	0.37	slightly high
Technology Factors	3.20	0.44	slightly high
Learning Flexibility	3.20	0.45	slightly high
Learning Management	3.18	0.30	slightly high
Readiness for Blended Learning	3.12	0.43	slightly high

DISCUSSION

The classroom learning aspect has the highest mean score (3.29), and students are slightly ready. The findings show that face-to-face classes improve online learners. Lecturers and friends can also help respondents. According to Firdaus F 2020⁸, the classroom learning factor has the highest average value (4.65) at 79%. Their research found that respondents prefer direct discussions with teachers and classmates. Respondents also think face-to-face learning fosters more community than online learning. In-person assistance helps respondents submit and receive comments from lecturers and classmates faster. However, time constraints make face-to-face encounters problematic for certain students. The finding contradicts a prior study⁷ that indicated unfavorable classroom learning results; this suggests respondents will be less ready to embrace blended learning if face-to-face learning becomes more important. Tang CM 2013⁹ claimed that when the desire for face-to-face learning is significant, students will not study independently online, lowering their class performance.

It will also cause students to seek face-to-face studying in a scheduled classroom. Students are slightly more ready for online learning, with the second-lowest mean score (2.87). According to the findings, respondents regarded online classes as less successful. Firdaus F 2020⁸, found the same results, with the second lowest overall average value among other factors (3.85) with 65%, indicating that respondents rated this factor less positively than face-to-face classes, which they considered more effective. Respondents had difficulty comprehending web content; this is also because lecturers just present material and rarely engage with students, so they cannot provide feedback when students struggle. Effective management by lecturers is crucial for online

Table III: The Students' Readiness Based on the Questionnaire (n=358)

Item	x	SD	Description
Classroom Learning Factors			
Anatomy and Physiology face-to-face class activities help me prepare for online learning	3.34	0.50	slightly high
Anatomy and Physiology face-to-face class activities help me generate ideas for assignments	3.30	0.52	slightly high
I get support or feedback from my lecturers and friends during Anatomy and Physiology face-to-face classes	3.24	0.49	slightly high
Online Learning Factors			
I find learning Anatomy and Physiology online interesting	2.88	0.65	slightly high
I prefer self-study when learning Anatomy and Physiology online	2.89	0.67	slightly high
I can communicate with lecturers or classmates easily when learning Anatomy and Physiology online	2.85	0.66	slightly high
Online Interaction Factors			
I like to access Anatomy and Physiology materials and resources without time and place limits	2.61	0.72	slightly high
I can decide where and when I want to study Anatomy and Physiology course materials	2.56	0.59	slightly low
I like to study Anatomy and Physiology course material at my own learning pace	2.97	0.58	slightly high
I can communicate with my lecturer or classmates easily when learning Anatomy and Physiology online	2.77	0.64	slightly high
I can collaborate well with my team on Anatomy and Physiology assignments	3.18	0.51	slightly high
Technology Factors			
I find the platform (https://learn.uph.edu/) easily accessible for teaching and learning Anatomy and Physiology responsibly	3.20	0.59	slightly high
I believe the platform (https://learn.uph.edu/) is useful for teaching and learning Anatomy and Physiology	3.32	0.48	slightly high
I think this platform should be used in teaching and learning other courses	3.09	0.60	slightly high
Learning Flexibility Factors			
I like to access Anatomy and Physiology learning materials and resources without time and place limits	3.17	0.56	slightly high
I can decide where and when I want to study Anatomy and Physiology course materials	3.26	0.51	slightly high
I like to study Anatomy and Physiology course material at my own pace of learning	3.19	0.53	slightly high
Learning Management Factors			
Anatomy and Physiology learning both in face-to-face and online classes motivates me to be more disciplined and responsible	3.26	0.49	slightly high
Anatomy and Physiology learning in both face-to-face and online classes encourage me to create my learning plans and goals	3.22	0.47	slightly high
I can manage my time efficiently in learning Anatomy and Physiology	2.96	0.56	slightly high
When I have problems in learning, I can find ways to solve them (e.g. asking others to help, or looking for information on the Internet)	3.30	0.49	slightly high
Readiness for Blended Learning			
I prefer to learn Anatomy and Physiology through blended learning that combines face-to-face and online learning rather than just learning in a face-to-face class	3.10	0.60	slightly high
I prefer Anatomy and Physiology blended learning which combines face-to-face and online learning rather than full online learning	3.15	0.69	slightly high
I am ready to face challenges in learning Anatomy and Physiology blended learning	3.11	0.47	slightly high
If I have the opportunity, I would like to join Anatomy and Physiology blended learning.	3.13	0.51	slightly high

learning continuation. Tang CM 2013⁹ observed that many respondents liked online learning, study management, online interaction, and learning flexibility. Students are more in charge of their learning and academics. Students with great discipline can advance at their own speed and achieve more. Students are marginally more ready than the online interaction element, with the lowest mean score (2.81). The researcher found that online Anatomy and Physiology students felt alone or confined. Online Anatomy and Physiology students rarely engage with lecturers. Previous studies^{6,8} indicated a low average communication self-efficacy/online interaction component. Chung E 2020¹⁰ found that the communication self-efficacy factor had a low mean (3.69) and that respondents were confident using online learning tools to communicate and express their thoughts. Still, they rarely posted questions or participated in online discussions and believed they were not fully prepared for online learning. Online interaction had the lowest mean (3.81), based on Firdaus F 2020⁸, and students with low achievement levels need direct interaction to discuss and get good explanations from teachers and friends for material they don't understand. The prior study⁹ indicated a positive response for online interaction variables and found that students feel comfortable using web technology to share ideas with others. Due to the fact the research sample is a web-savvy student. The third highest mean score (3.20) is for technology, with students in the slightly high preparedness category. The researcher found that technology is ready to continue blended learning.

The online learning platform (<https://learn.uph.edu/>) is working correctly for blended learning. The preliminary data survey shows that 25% of students remain not as confident in their computer skills, and most are scholarship students, so not all may have the proper hardware/software for blended learning. The finding aligns with the former study¹⁰, which reported a slightly high mean (2.73), placing technology as the third largest contributor. The survey found that not all students had good internet access; thus, it should be reconsidered. Firdaus F 2020⁸, discovered that technology has the third highest mean (3.96), with 67%. The study respondents claimed online learning websites and apps could be helpful. However, some students doubt its usability.

Students struggle with online learning support and multimedia apps. A study found different effects when technology ranked last among other criteria. The prior study¹¹ revealed that technology platforms are essential for blended learning. Abbacan-Tuguic L 2021¹³ advised students and educational institutions to spend more on online learning accessible. The second highest mean score (3.20) is for learning flexibility, with students having a slightly high level of readiness. Nursing students are ready for blended learning, according to the research. Learning flexibility reveals that students can choose where and when to

study Anatomy Physiology course materials, with the highest average in question 16. The lowest average in question item 15 shows limited access to Anatomy Physiology study and teaching materials; this suggests that while students can choose when and where to learn, there are still barriers to complete learning flexibility. The initial survey revealed that students did not review materials outside study hours due to scheduling issues and other activities. This finding affirms the prior study⁶, which found that learning flexibility has the second-highest total average of 4.15, with 71%.

Research participants liked learning at their own pace. Various students learn at different rates. They can choose when and where to study. However, Abbacan-Tuguic L 2021¹³ found that learning flexibility had the most significant average value (3.61). Respondents declared they would enhance access to infinite material and information. Respondents are eager to learn at their own pace and evaluate their learning. Learning management results in an average score of 3.18 for students with slightly high preparation. The findings demonstrated moderately high blended learning preparedness in nursing students. Effective learning management requires students to be motivated, disciplined, able to create learning plans and goals, and solution-oriented to overcome difficulties.

The mean value was 3.11, precisely like the earlier study⁴. The respondents struggled to schedule online and face-to-face instruction. Students are more motivated to learn responsibly. However, students challenge themselves with time management in their studies. Firdaus F 2020⁸, found the contrary with the mean value (3.92) and a proportion of 67%. Students can manage their study time and consider studying seriously. They lack the enthusiasm to learn online and occasionally forger assignment deadlines. The mean score for blended learning preparedness is 3.12, with students scoring slightly higher. Most students prefer a combination of offline and online instruction instead of complete online learning. They choose blended learning over face-to-face classroom instruction; this demonstrates that students are partially ready for blended learning, but they consider combining the two methods more than just one. According to the prior study⁴, students obtain face-to-face classes more productively and enjoyably, and they also believe they provide an opportunity to gain knowledge and build relationships with lecturers and friends (mean value=3.10). However, students preferred blended learning.

CONCLUSION

The current study on 358 first-year nursing students at one private university in West Indonesia indicated the "Classroom Learning" was the highest score. The "Online Interaction" scores lowest in all categories. Students should prepare adequately for blended learning. Future research may investigate the causal

relationship between classroom learning and online interaction aspects impacting nursing students' blended learning preparation, emphasizing the most and least significant factors.

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AUTHOR CONTRIBUTION

Sihombing RM: Major contribution in conceptualizing the study design, analysis, interpretation of results, and supervision of the study

Zebua CTS: Conception and design, material preparation, and data collection

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