Original Article

Entry level nursing graduate students' perception and readiness toward online component of blended learning: A mixed method study

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Abstract:

BACKGROUND: Blended learning (BL), the integration of online with face to face teaching, is established as a teaching method in higher education. Understanding the learner's readiness toward online component of BL is important in designing and delivering BL. Nursing students require proficiency in interpersonal relationship and social interaction apart from knowledge and skills. BL may provide an opportunity to acquire the professional skills better than the traditional face to face sessions. The objectives of this study were to identify the nursing student's readiness toward BL and perceptions about the online learning component of BL.

MATERIALS AND METHODS: First- and second-year entry level graduate nursing students of Sri Ramachandra Institute of Higher Education, Chennai, India, were the participants of the study. This study used a mixed method approach. An online questionnaire, developed based on the literature and expert consensus, was used in the first phase. A focus group discussion (FGD) with ten random participants of the survey was conducted to understand the perceptions and readiness to adopt the online component of BL. The present study was conducted from December 2019 to January 2020. Survey results were analyzed through descriptively. Content analysis was carried to summarize FGD results.

RESULTS: A total 158 students of entry level nursing graduate programme participated in the survey. 53.8% of felt BL will have positive effect on their learning and 70% of the respondents were ready to adopt BL. The FGD identified two themes: (I) Readiness to adopt online learning as a component of BL and (II) perceived barriers and challenges in adopting online contents.

CONCLUSION: Entry level nursing graduate students had a positive perception about the online components. Majority of them are confident in accessing the online contents. Willingness to learn through online, previous experience with online learning, and perceived advantages of online component might influence the learner's readiness. Availability of internet and absence of teachers were perceived as the barriers to online learning by the participants.

Keywords:

Blended learning, nursing education, online teaching, perception, readiness

Introduction

The 21st century learners depend heavily on communications technologies to access information and to carry out social and professional interactions. They prefer active rather than passive learning.[1]

Higher education institutes have several technologies to promote active learning of these learners such as online learning.[2] Online learning provides the opportunities for active participation and collaborative learning.[3,4] Interactive online sessions fit with the different learning styles of the

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learners.[5,6] However, face to face teaching through innovative methods cannot be replaced completely by online teaching, especially in health-care professional education. Innovative training methods using available technologies should be considered to improve the clinical skills of nursing graduates.[7] Online teaching exists in nursing education since 1990. Acquiring necessary clinical, interpersonal, and social skills through the formal educational programmes is important for nurses.[8,9] Online teaching alone will not be able to impart clinical skills.

Integration of online teaching with face to face sessions provides the learners flexibility and opportunity to collaborate with peers. This format of teaching method is identified as blended learning (BL). Garrison and Kanuka define BL as "… the thoughtful integration of classroom face-to-face learning experiences with online learning experiences.[10] This seamless integration of online learning with traditional face to face sessions improves learning experiences and students engagement.[11] BL enhances the learner's active participation and self-reflection. Availability of learning materials online provides flexibility in learning.[12] When compared to online learning alone, BL seems to improve the nursing student's knowledge and motivation level.

The success in BL method depends on the integration of online component and face to face session. BL as a method of teaching in nursing education has been studied extensively in developed countries.[2,13-15]

Implementing BL in developing countries might be more challenging, especially delivering the online components. Delivery of online content is influenced by readiness of the students to access the content. The learner's readiness toward online learning also depends on the accessibility and availability of e-contents, previous online learning experience, individual learning style, and time management skills.[16,17]

Social cognitive theory explains the factors influencing the learner's online readiness. Learners perception about online learning will influence their willingness to adopt BL as a method of learning.[18,19] Thus, understanding the student's perception and readiness toward online learning will be the key in introducing BL. Learners perception regarding BL, especially the online component, has been shown to vary across health professionals and countries.[4,20-23]

Readiness for online learning is defined as "being mentally and physically ready for certain online learning experience and actions."[24] The objective of this study was to identify the nursing student's readiness toward BL, especially the online component, and to understand their perceptions.

We hypothesized that learner's perception and readiness for online learning can influence the outcome of the BL learning, and the perception and readiness can vary among countries with the different educational system. This study was designed to assess the perception toward BL and online readiness in a group of entry level nursing students' in an Indian University. As the participants of this study are from varied economic status, educational system, and culture, we anticipate a difference in their perception of online learning and readiness to access online content. Understanding these aspects will assist in preparing and delivering the online content meeting larger proportion of students.

Materials and Methods

A mixed method approach was used to understand the student's readiness, attitudes, and perception toward BL. Institutional Ethics Committee approval was obtained (IEC-NI/19/APR/69/37). Participants were informed about the study, and the faculty in-charge was given a briefing to get their support. All the students who accepted to participate in the study filled an online survey. A focus group discussion (FGD) with randomly selected students (10 numbers) was conducted to understand their perceptions toward BL.

Sample
B.Sc. nursing students enrolled in an entry level graduate nursing program participated in this study through invitation. An open invitation was sent to all the students of 1st- and 2nd-year students of faculty of nursing, Sri Ramachandra Institute of Higher Education and Research, Chennai. A total number of 158 students completed the online survey out of 176 students invited. The purpose of the study and the concept of BL were explained in the initial part of the questionnaire, and consent was obtained online. The study was conducted from December 13, 2019, to January 28, 2020.

Questionnaire
The preliminary survey questionnaire was developed based on the literature.[16,17,22,25] Educators of different health professionals validated the contents of questionnaire. Feedback received from experts were included, and the final questionnaire prepared. The questionnaire included following sections:
- Basic demographic details which included age, gender, geographical, and Indian school education board of the student
- Availability of smartphone, computers, and Internet for learning
- Prior experience in online learning and awareness of commonly used online platforms for learning
- Confidence and comfort level in learning online, assessed through Likert scales

- Perception and readiness to adopt blending online and face to face learning, assessed through Likert scale
- Two open-ended questions to identify the facilitating and hindering factors for using online learning.

A pilot study was conducted to check test-retest reliability of the questionnaire. Sixteen students of other health sciences programmes completed the questionnaire twice in the interval of 3 weeks.

Focus group discussion(FGD)

In the second phase, 10 students were invited to participate in the FGD. Selection of the participants was decided randomly by one of the authors using the role numbers. The objective of the FGD was in-depth understanding of student's readiness toward BL. FGD was also used to identify the barriers and advantages of online learning as a component BL from the student's perspective. A semi-structured guide prepared based on open-ended questions of the survey was used to generate discussions. Date and timing of the FGD were decided in consensus with the participants. One of the authors (NS) trained in FGD briefed students on concepts of BL prior to FGD and moderated the session. FGD was recorded and transcribed for analysis. Second researcher (R) made handwritten notes. FGD lasted for 50 min.

Data analysis

Descriptive analysis was undertaken using SPSS© statistics (SPSS Inc., Chicago, Ill., USA) for windows version 18 software. The total number of responses were categorized by criterion in questionnaire. Frequency and percentages were calculated.

Analysis of FGD

Data were analyzed by means of content analysis by two investigators independently. Words which provided similar meaning from the transcripts were grouped as meaning units in the first step. Identified units were condensed as codes, and themes were identified, directly by grouping the codes. Two authors independently coded the transcript using the predetermined criteria.

Results

Table 1 shows the demographic details of the study participants demographic data.

Table 2 shows the availability of the gadgets to access the online contents.

Out of 158 respondents, 155 of them possessed smartphones and 42% of the respondents had either laptop, desktop, or tablet computers. 88.6% of the respondents had access to internet through

Table 1: The demographic details of the study participants demographic data

Variable	*n* (%)
Gender	
Male	79 (50)
Female	79 (50)
Place completed schooling	
Semi-urban	93 (58.9)
Urban	62 (39.2)
Village	3 (1.9)
Board of school	
CBSC	7 (4.4)
Matriculation	42 (26.6)
State board	109 (69)

Table 2: Gadgets available with the students

Ownness of gadgets	Total number (%)
Do you own a mobile phone	
Yes	157 (99.4)
Not a smart phone	2 (1.3)
Smart phone-Android	153 (96.8)
Smart phone-iOS	2 (1.3)
No	1 (0.6)
Do you own any of the following devices	
Lap top	35 (22.2)
Stationary PC (desktop)	16 (10.1)
Stationary PC (desktop), laptop, tablet	7 (4.4)
Tablet	8 (5.1)
No	92 (58.2)

mobile data. Google© was the most used source for knowledge (83.5%).

Most of the respondents (73.6%) of the respondents agreed that they are confident in learning through online, 75.3% of respondents agreed that they are comfortable in accessing the online learning materials and 73.4% were willing to receive feedback through online [Figure 1].

Half of the respondents (53.8%) felt that BL will positively impact their learning, where as one-fourth of the respondents (25.9%) felt BL will not change their learning [Figure 2]. The answers provided for the open questions were classified. Respondents mode of internet access and source of information is shown in Tables 3 and 4 respectively.

Figure 1 shows confidence level and readiness toward online learning .

Figures 2 and 3 shows perceived impact of BL.

Results of FGD

Presentations of the results reflects the themes identified from the analysis. We identified two themes (I) readiness to adopt online learning as a component of BL (II) barriers perceived and challenges faced in adopting

online contents. Table 5 shows the themes and categories identified through FGD.

Theme 1: Readiness to adopt online learning as a component of blended learning

We derived this theme from the following categories: (i) Willingness to learn from online contents, (ii) Previous experience in online learning, and (iii) Perceived advantages of accessing online contents

(i) Willingness to learn from online contents:
Participants showed interest to learn through online contents. They expressed that having access to online contents will enhance their learning as it provides access to materials as and when required and they expected that it should be accessible through smartphones as they spend sizable amount of time with it.
- "I usually require more time to understand, having materials online will give me better opportunity to learn"
- "Think, I will be able to spend at least 2 h a day in learning online; Watching lecture videos at home and while travelling to college may save time"
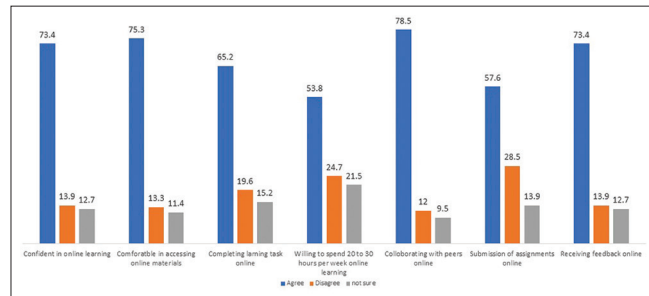

Figure 1: Confident level and readiness toward online learning

Figure 2: Ready to adopt blended learning (in percentage) in a scale of 1 to 5 (where 5 is high)
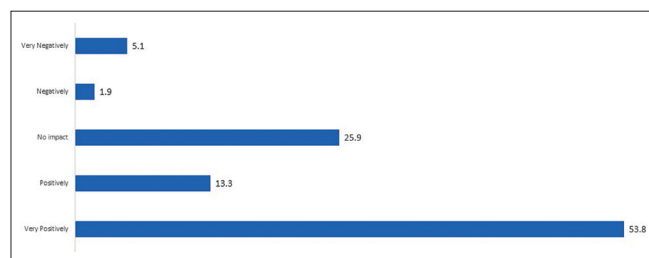

Figure 3: Perceived impact of blended learning (response in percentage)

- "Now also we share our notes through WhatsApp". Learning styles of the learners can be addressed through online contents. Some of the learners prefer to learn through videos rather listening audio clips or reading materials
- "Even some of my friends say that they could understand better through animated videos than just listening."

(ii) Previous experience in online learning
Majority of them had previous experience during their higher secondary education. The participants correlated their previous experiences.
- "I referred Khan academy classes during m plus 2; the content provided were very useful and I could learn better; I will be able to understand the content if get access to them through online"
- "One of our teachers provided notes through Google Docs, which I found very useful as I could refer whenever I required; It will be great if same continues in college."

(iii) Perceived advantages of online contents

Table 3: Access to internet

Mode of internet access	*n* (%)
Mobile data	140 (88.6)
Mobile data; Wi-Fi	11 (7)
Wi-Fi	5 (3.2)
LAN	2 (1.3)
Access of internet for learning purpose	
1 h	78 (49.4)
2 h	50 (31.6)
3 h	16 (10.1)
More than 3 h	14 (8.9)

Table 4: Source of information for learning and assignment purpose

Source	*n* (%)
Google	135 (85.4)
E-library	19 (12.2)
Books; Google scholar; PubMed	3 (1.8)
No	1 (0.6)

Table 5: Results of FGD analysis

Theme	Categories
Readiness to adopt online learning as a component of blended learning	Willingness to learn through online contents
	Previous experience in online learning
	Perceived advantages of online contents
Perceived barriers and challenges in adopting online contents	Availability of Internet and gadgets and accessibility
	Quality of contents
	Lack of accessibility to teachers
	Health-related issues and concentration

Participants perceived that the availability of online contents will provide them with flexibility in accessing the learning materials. Availability of learning materials online will help the slow learners to learn repeatedly. Learners will be able to collaborate with their peers in learning.

- "I think, I will learn better if could have the study materials available through online; It will definitely helpful in understanding the subject"
- "During my plus 2, I used to discuss with my classmates through WhatsApp; I think that helped to understand the concepts better"
- "Students can refer the materials whenever they require; whereas now, if I missed my class it is difficult to get the class materials."

Theme 2 Perceived Barriers and challenges in adopting online contents for blended learning

(i) Availability of Internet and gadgets and accessibility to online contents

Though all of the participants had smart phones, some of them expressed the need to have other gadgets such as laptops and tablets to access online contents. Access to internet was perceived as a great challenge.

- "I don't think my smartphone will be sufficient to access the online contents. Many of my friends are not having access to laptops and computer; they depend on the library"
- "I have only 2 GB data access per day; in case if I need to take part of online learning it may be difficult at home."

(ii) The participants felt that the content provided should be attractive and easy to understand. Lengthy videos and too much of reading will dilute the learning process

- "Any content which is boring like reading many pages is not good for online learning; I prefer shorter videos and more activities"
- "I don't watch the video if it is not interactive."

(iii) Lack of accessibility to teachers

Participants felt the absence of teachers during online learning is one of the disadvantages.

- "We may not have the teachers when doubt arises while learning online; Contacting the teacher to clear doubts immediately is the greatest advantages of learning directly."

(iv) Health-related issues and concentration

Development of musculoskeletal problems such has neck and shoulder pain is perceived as the disadvantages of online learning. There was a strong feeling among the participants that it may affect their eyesight in the long term. Accessing online contents requires more concentration.

- "I feel if I use computer for learning online, we may develop neck pain"
- "I will not be able to concentrate as I tend to

navigate through other sites when I am online; think this is the same for others."

Discussion

The objective of this study was to identify the entry level nursing graduate readiness toward BL, especially the online components. The mixed method approach identified the learner's perception and barriers to BL. Majority of participants were online ready and were equipped with gadgets and internet connectivity. More than half of the participants were confident and comfort in accessing online contents.

Readiness toward online learning was assessed by using the similar concepts by Warner *et al.* in the Australian vocational training sector.[26] Student's mental and physical readiness to use the online components as a part of BL was examined through the survey and FGD.[24] Majority of the participants owned at least a smartphone. The availability and usage of smartphones by the participants might allow them to access the online contents.

Majority of the (80%) participants rated more than 3 in the 5-point scale in readiness to adopt BL. This correlates with their answers to other questions which explored their technical skills, previous exposure to online contents as these might be important in learning through online.[25,27] The FGD also identified that the learners were ready to use the online contents. Social cognitive theory, postulated by Bandura suggested that learners' personal experience, peer support, encouragement received, and psychological status decide their readiness. Most of the participants of this study had previous online learning experience as identified through FGD.[19]

The participants (65%) had previous experience in accessing online contents. They also experienced peer support in online learning. Through the survey results and FGD, it is evident that the participants were ready to use online contents as a component of BL. Bandura's social cognitive theory could be applied to explain the findings. It has been reported that learners with a high level of motivation learn better through on-line.[18]

Flexibility in accessing the learning materials and collaborative learning were perceived as an advantage of online components by the participants. This was similar to the findings in the published literature.[2-4] It is evident from these findings, the participants are ready to adopt online learning as a component of BL.

Learning style of the students might influence their participation in online learning as expressed some of the participants; however, this requires further exploration.[5,6]

The thematic analysis of FGD data identified the perceived barriers and challenges in adopting online learning as a component of BL. Restricted availability of Internet is perceived as a challenge to access the e-contents by participants. This could be a real challenge when implementing BL in developing countries. Although learners have acceptable level of internet access, they might prefer to use it for social networking rather for online learning.[22]

The requirement for access to computers will be a major challenge in implementing BL in developing countries. More than half of the respondents of this study did not own a computer. It is important for the educators and administrators to consider developing online portals compatible with smartphone.

One of the barriers perceived by the participants was the absence of online presence of teachers during the online sessions. This could be attributed to the participants lack of prior experience with BL. However, the online presence of the teacher is one of the hallmarks of BL. While designing the online component of BL, it is important to ensure that the learners have adequate opportunity to interact with the teachers and peers.[28] The learning management systems supports the interaction among the peers and teacher through various features such as discussion boards and chats. Engaging the students through activity embedded contents will help reduce the boredom.

Adoption of mixed methodology is the strength of this study, since it provided in-depth understanding of the learner's readiness. Up to the knowledge of the authors, this was the first of its kind study conducted among the nursing graduate students of a developing country. This study identified online readiness of students of an institute situated in a metropolitan city. Hence, the results may not be generalized. Future studies with participants of different geographical locations with larger sample are warranted.

Conclusion

The entry level graduate nursing students are ready to accept BL as a method of learning. Individuals perception about online learning is influenced by their previous experience and accessibility to internet. The learners are confident in accessing online contents. The quality of online contents and absence of teacher during the online sessions were perceived as the barriers to online component of BL. The barriers and challenges perceived by the students needs to be addressed while designing BL modules.

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Conflicts of interest

There are no conflicts of interest.

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