The Impact of Different Learning Methods on Nursing Students Learning Styles at the University of Lahore, Pakistan

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Abstract

Blended learning (BL) is positive development in education. This method provokes the learner's critical thinking and given different ways for implementation of their knowledge in real life. The objective of the study is to determine the difference of blended learning teaching strategy and lecture-based teaching strategy on the learning outcome of the undergraduate nursing students in Lahore, Pakistan.

Quasi experimental study design was used by utilizing control and experimental groups for comprising two methods of students learning. 197 participants were recruited in control group and experimental groups. The study sample was determined through the convenient sampling method.

In this study the establishing reliability and construct validity of the tool was 0.7 and 0.75 respectively. In addition to this internal consistency Cronbach's coefficient alpha was computed 0.70. Generally, the reliability and validity were considered acceptable and satisfactory above 0.70.

The results findings revealed that blended learning has significant relationship with awareness (p= < 0.02) learning strategies (p= < 0.07) learning activities (p=< 0.06), evaluation (p=0.04) among the experimental groups.

In the conclusion, blended learning significantly improves the learning of the students and provides the space for better skills in the clinical setting simultaneously. Thereafter, institutions, policy makers and regulatory bodies should incorporate this strategy in the nursing curriculum in Pakistan.

Keywords: Blended learning, lecture-based learning, self-directed learning.

Introduction

In recent era educators identify the different learning styles such as face-to-face learning or traditional method, virtual learning, problem-based learning, project base learning, blended learning etc. In the learning process there is one of the particular relations between a students and fellow students as well as with teacher. Moreover, direct contact in learning enhance this relation[1]. Lots of information and long-term experiences are outcome of the positive behavior that depends upon a body language including gestures, tones, rhythm, stress, and volume of voice. Lecture based learning is direct contact in training that give action, response and reaction are directly perceived by the participants[2]. Lecture based teaching environment in the first priority of the students, because of the reason is the direct front face to face education gives more valid instructions and guidance[3]. There is no doubt that face to face courses are a great source of learning for students where they have positive feeling and great interest in learning[4]. Others are interested in the distance self-directed learning focusing their own convenience. Blended learning (BL) is positive development in education. This method provokes the learner critical thinking and given different ways for implementation of their knowledge in real life. Blended learning facilitates and inspires the student learning and creativity[5]. Open the way of new teaching opportunities and enhance the student engagement. Blended learning enhances students' competency, satisfaction, motivation, and achievement, therefore to explore in-depth the researcher in this study re-designed and re-developed a combined teaching method for the course[6]. The objective of this study is to explore the effect of blended learning and lecture-based learning on learning outcome of the

undergraduate students using Self-rating scale of self-directed learning tool in Lahore Pakistan.

Objective: To find out the impact of different factors affecting nursing students learning styles as well as compare the Lecture Based Learning v/s Blended Learning in an Elective Nursing Course the University of Lahore, Pakistan.

Objective 1: Is there significant difference among the student's awareness who used blended learning and the student's awareness who used lecture-based learning?

Objective 2: Is there significant difference among the student's learning strategies who used blended learning and the student's learning strategies who used lecture-based learning?

Objective 3: Is there significant difference among the student's learning activities who used blended learning and the student's learning activities who used lecture-based learning?

Objective 4: Is there significant difference among the student's interpersonal skills who used blended learning and the student's interpersonal skills who used lecture-based learning?

Null hypothesis: There is no significant difference in the blended teaching and lecture-based teaching strategies on nursing students learning outcomes.

Alternative hypothesis: There is a significant difference in the blended teaching and lecture-based teaching strategies on nursing students learning outcomes.

Hypothesis

This study is designed to assess the hypothesis that blended teaching or lecture-based teaching strategies foster the nursing students learning outcome (awareness, learning strategies, learning activities, evaluation, and interpersonal skills).

Null hypothesis: There is no significant difference in the blended teaching and lecture-based teaching strategies on nursing students learning outcomes.

Alternative hypothesis: There is a significant difference in the blended teaching and lecture-based teaching strategies on nursing students learning outcomes.

Methodology

To answer the research, question the researcher adopted quasi experimental study design. The population of this study was B.Sc Nursing students in Lahore Pakistan. In Pakistan B.Sc Nursing program has two categories one program is Generic B.Sc Nursing with the minimal entry requirement of successful completion of 12 grade with at least 50 % and the other program is Post RN B.Sc Nursing with the requirement of diploma in Nursing and one year of Post Basic specialization diploma with two years of experience. Participants were recruited through convenience sampling technique. Males and females studying the subject of Leadership and Management (The same course taught in both semesters having same objectives) in nursing program (Generic B.Sc Nursing and Post RN B.Sc Nursing program) of Fall-2016 and Fall-2017 in Lahore School of Nursing, the University of Lahore, were approached. The total sample size of the study was 197.

Table 1. Intervention strategy of the study

Semester	Experiment Group	No of Students	Control Group	No of Students
Fall 2016	Post RN B.Sc Nursing	49	Generic B.Sc Nursing	50
Fall 2017	Generic B.Sc Nursing	49	Post RN B.Sc Nursing	49

The permission to conduct the study was taken from the Texila American University Guyana and the Institutional Review Board of the University of Lahore.

Table 2. Data Collection Procedures of the Research for fall 2016 and fall 2017 semesters

Time	Tasks
July 2016 and 2017	• Teacher / Faculty participants recruited
August 2016 and 2017	• Syllabus teaching strategies drafted by researcher • Teacher training conducted by researcher • Student participants enrolled
September 2016 and 2017	• Researcher starts observing both classes daily (experiment and control group) • Faculty hold first planning meeting with students
October 2016 and 2017	• Researcher starts observing both classes daily (experiment and control group) • Faculty meet daily only for one hour to plan. • Researcher observe the meeting
November 2016 and 2017	• Researcher starts observing both classes daily (experiment and control group) • Faculty meet daily only for one hour to plan. • Researcher observe the meeting
December 2016 and 2017	• Researcher starts observing both classes daily (experiment and control group) • Faculty meet daily only for one hour to plan. • Researcher observe the meeting
January 2017 and 2018	• Researcher starts observing both classes daily (experiment and control group) • Faculty meet daily only for one hour to plan. • Researcher observe the meeting • Students questionnaires administered to both groups • Student interviews conducted • Faculty post semester questionnaire administered • Faculty participants interviewed

"Self-rating scale of self-directed learning" (SRSSDL) tool was used for this research. Pilot study was executed after build of the tool on 10% of the learners to test the tools and necessary changes were done according to the results of finding and the opinions of experts in the pilot study. Cronbach's alpha shows a very high level of reliability at α = .901. Based on these results it concludes that the instrument is a reliable and valid for this study.

Table 3. Cronbach alpha coefficients for questionnaire

| Scales	Cronbach's Alpha	N
Awareness	.915	42
Learning Strategies	.888	30
Learning Activities	.911	36
Evaluation	.901	33
Interpersonal Skills	.892	30
Total	.901	171

Results

In the methodology it is discussed that students taking Lecture based learning were the 'control' group and the students taking the students taking blending learning semester were in the 'experimental' group. There were also two data set one set comprised of generic BSN student and the other group comprised of Post RN BSN students. In 2016 the Generic BSN students were in the control group and Post RN students were in the experimental group and in 2017 the Post RN group was in control group and Generic BSN students were in experimental group.

FIGURE 1: SOCIO-DEMOGRAPHIC FREQUENCIES OF GENERIC B.SC NURSING STUDENTS IN LECTURE BASED LEARNING, 2016
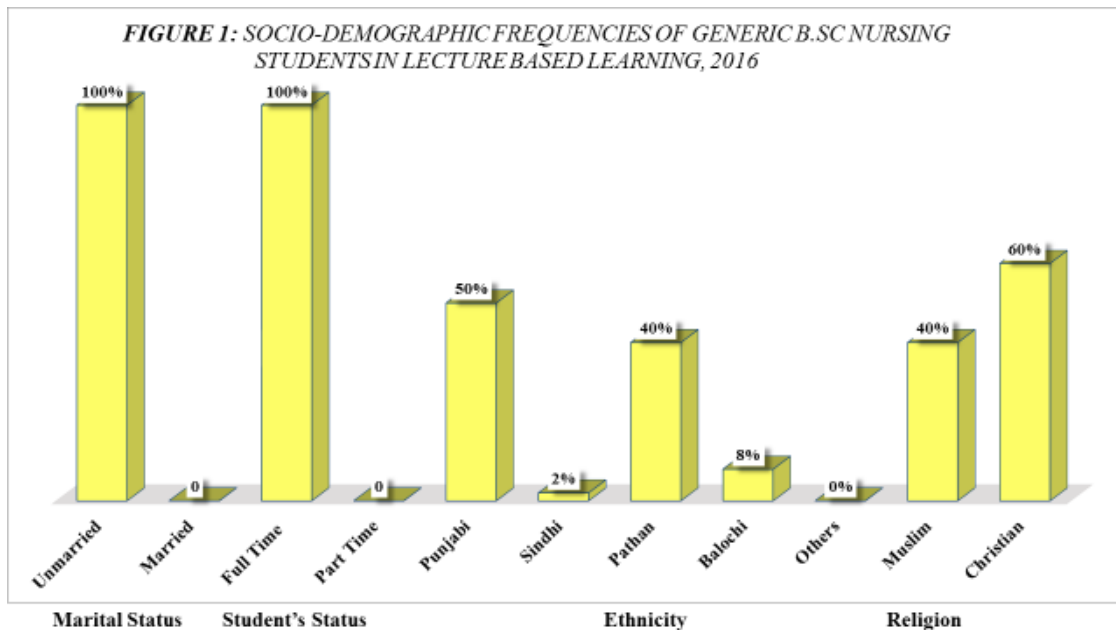
In figure 1 sociodemographic frequencies of Generic B.Sc Nursing Students in taking lecture based learning were displayed. The mean age of the students were 23 years and 100% of the students were unmarried. Al the participants were full time students. Majority of the students were Punjabi (50%) and Pathan (40%). In this session majority of the students were Christian (60%) and Muslims were (40%).

FIGURE 2: SOCIO-DEMOGRAPHIC FREQUENCIES OF GENERIC B.SC NURSING STUDENTS IN BLENDED LEARNING, 2017
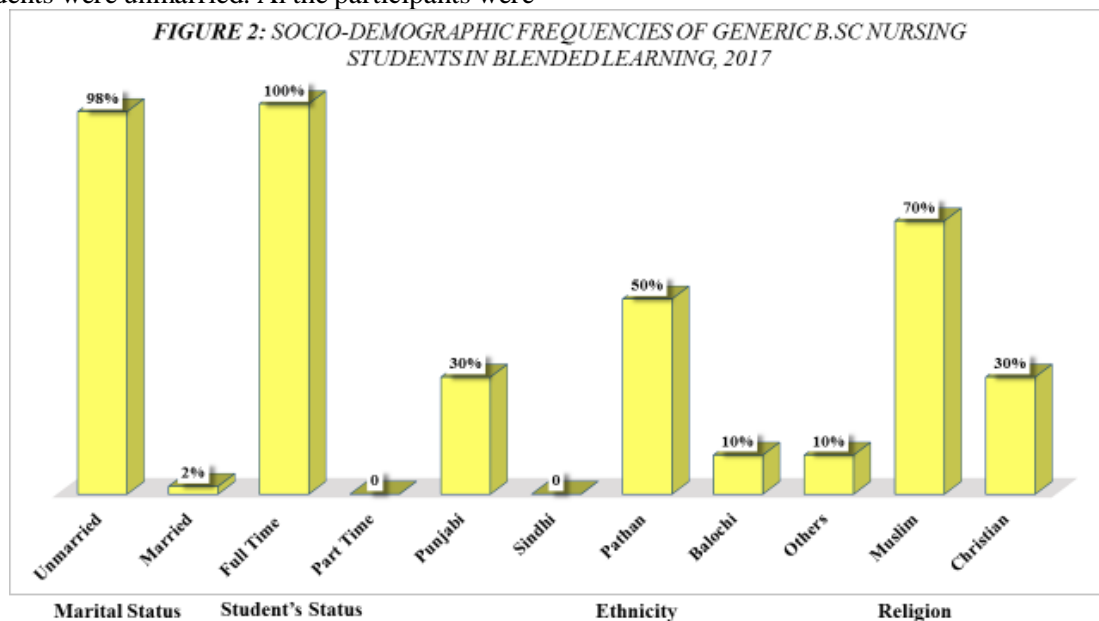
In figure 2 sociodemographic frequencies of Generic B.Sc Nursing Students in taking blended learning were displayed. The mean age of the students were 24 years and 98% of the students were unmarried. All the participants were full time students. Majority of the students were Pathan (50%). In this session majority of the students were Muslims were (70%).

Table 4. Normality Test analysis by Shapiro- Wilk Test

S. No	Variables	P
1	Awareness	0.7
2	Learning Strategies	0.6
3	Activities	0.27
4	Evaluation	0.71
5	Interpersonal Skills	0.8

In table 4, normality test of the variables was displayed. The mean of mean is calculated of the five different sections of the outcome learning variables and then the normality test was run. The assumption of the null hypothesis in Shapairo Wilk test was that the data is normally distributed. In the results of the normality test all the p values were above 0.5 which is the cutoff. Hence, all the variables were normally distributed.

Table 5. T- Test comparison of Lecture Based Method and Blended Learning among Generic B.Sc Nursing Students

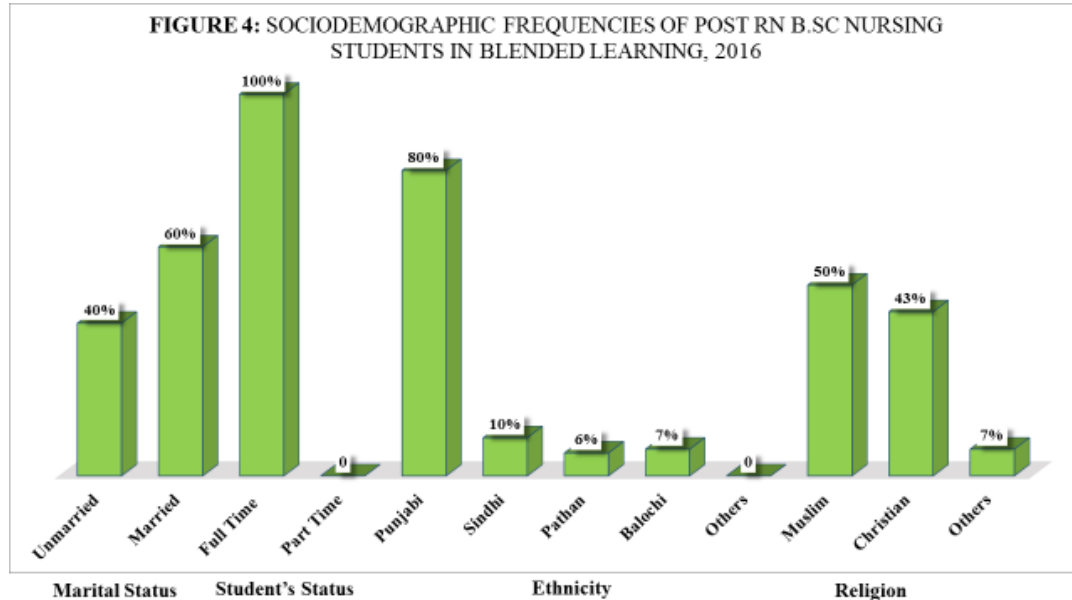| Standard	Blended Learning		Lecture Based Learning		T(df)	Significance p
	X	SD	X	SD		
Awareness	2.5	0.53	4.1	0.5	-14.2(96)	0.0001
Learning Strategies	2.01	0.77	4.13	0.07	-14.5 (96)	0.0001
Learning Activities	2.2	0.6	4.2	0.46	-0.17.3 (96)	0.0001
Evaluation	2.2	0.5	3.9	0.6	-13.2(96)	0.001
Interpersonal Skills	2.3	1.0	4.3	0.5	-12.2 (96)	0.001

In table 5 independent T test comparison was conducted between the lecture-based learning methods and blended learning to that of the different sections of the outcome variables. There was significant difference between the means of lecture based learning and blended learning.

In all the sections the p value is below 0.05 which shows that the both the learning methods were quite different from each other in terms of student 'awareness', 'learning strategies', 'learning activities', 'evaluation', and 'interpersonal skills.

FGURE 3: SOCIO-DEMOGRAPHIC FREQUENCIES OF POST RN B.SC NURSING STUDENTS IN LECTURE BASED LEARNING, 2017
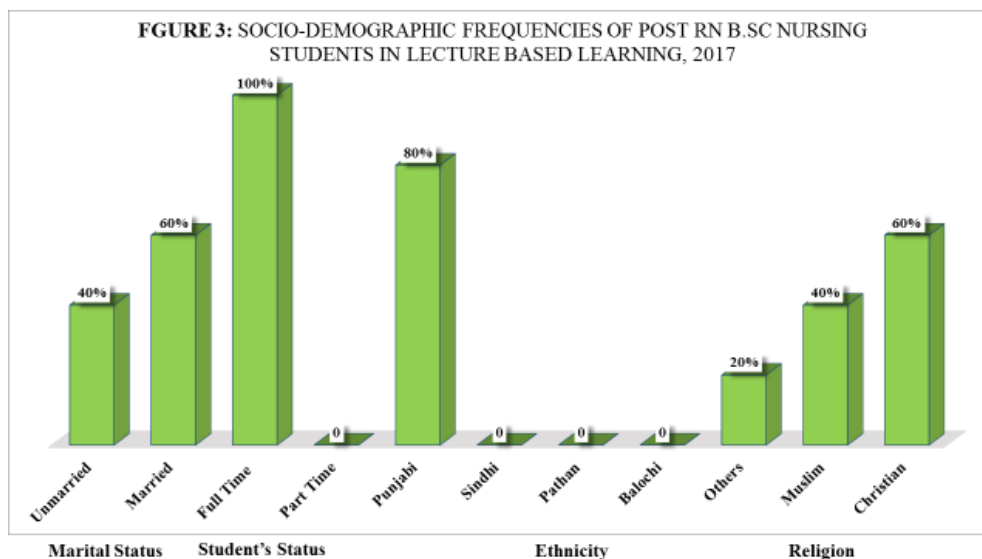
In figure 3, Socio-demographic frequencies of Post RN B.Sc Nursing Students in taking lecture based learning were displayed. The mean age of the students were 30 years and 40% of the students were unmarried. Al the participants were full time students. Majority of the students were Punjabi (80%) and Pathan (40%). In this session majority of the students were Christian (60%) and Muslims were (40%)

FIGURE 4: SOCIODEMOGRAPHIC FREQUENCIES OF POST RN B.SC NURSING STUDENTS IN BLENDED LEARNING, 2016

In figure 4, Sociodemographic frequencies of Post RN B.Sc Nursing Students in taking lecture based learning were displayed. The mean age of the students were 35 years and 100% of the students were unmarried. Al the participants were full time students. Majority of the students were Punjabi (80%) and Pathan (40%). In this session majority of the students were Christian (40%) and Muslims were (50%).

Table 6. Normality Test analysis by Shapiro- Wilk Test

S. No	Variables	P
1	Awareness	0.7
2	Learning trategies	0.6
3	Activities	0.27
4	Evaluation	0.71
5	Interpersonal Skills	0.8

In table 6, normality test of the variables was displayed. The mean of mean is calculated of the five different sections of the outcome learning variables and then the normality test was run. The assumption of the null hypothesis in Shapairo Wilk test was that the data is normally distributed. In the results of the normality test all the p values were above 0.5 which is the cutoff. Hence, all the variables were normally distributed.

Table 7. T-Test comparison of Lecture Based Method and Blended Learning among Post RN B.Sc Nursing Students

Standard	Blended Learning		Lecture Based Learning		T(df)	Significance p
	X	SD	X	SD		
Awareness	2.5	0.53	4.1	0.5	-14.2(96)	0.0001
Learning Strategies	2.01	0.77	4.13	0.07	-14.5 (96)	0.0001
Learning Activities	2.2	0.6	4.2	0.46	-0.17.3 (96)	0.0001
Evaluation	2.2	0.5	3.9	0.6	-13.2(96)	0.001
Interpersonal Skills	2.3	1.0	4.3	0.5	-12.2 (96)	0.001

In table 7 independent T test comparison was conducted between the lecture-based learning methods and blended learning to that of the different sections of the outcome variables. There was significant difference between the means of lecture based learning and blended learning.

In all the sections the p value is below 0.05 which shows that the both the learning methods were quite different from each other in terms of student 'awareness', 'learning strategies', 'learning activities', 'evaluation', and 'interpersonal skills.

Discussion

Results of the study reject the null hypothesis that there is no significant difference in the blended teaching and lecture-based teaching strategies on nursing students learning outcomes. Because this study results depict that blended learning method is superior to lecture based learning. As significant finding obtained from students undergoing blended learning than lecture-based learning. Similar results were obtained and showed that blended leaning is prioritized on lecture based learning[7]. Study reveal that blended learning encourages students as it promotes students' critical thinking and learning abilities[8]. Beside this, it is observed that blended learning enhances students' skills and satisfaction level than other types of learning. Also, blended learning is beneficial to get remarkable outcomes. In comparison to this study, blended learning fosters positive outcomes as students get more scores through blended learning[9].

Blended learning promotes more group discussion among students than lecture-based learning which is coherent to the study[10.]

Furthermore, blended learning is also useful as it leads to a two-way communication process more than traditional teaching method. The findings are also consistent with the study[11]. The result of this study shows that retention of new lessons, enhanced focus on important learning points and comprehension of diversified information were more effective in nursing students in blended learning methods compare to lectured-based learning method. Also, study showed that the effect of the learning rate in blended learning was more than the lecture-based learning method[12].

The study reveal that blended learning helps to learn about monitoring the goals accomplishment activity during evaluation and finding new learning challenges by appreciating peer feedback. Moreover, in another study who compared blended learning and lecture -based learning on nursing students. The results showed that blended learning had a more impact on students' learning and behaviour outcome[13]. The importance of blended learning in students' knowledge acquisition highlighted in the study which described that blended learning help students to relate the knowledge with practice[14].

In the current study findings reveal that blended learning intensifies student concentration, satisfaction and help to analyse new ideas, information and learning experiences. This enable the students to openly listen others point of view. According to this study students were more satisfied in blended teaching method. In some studies, the students' satisfaction in blended learning was greater than that in the lecture method[15]. The study showed that the students' satisfaction in blended teaching method was greater than that in the traditional lecture method.

Students in blended teaching method are provoked with a new kind of educational learning strategies that leads to more inducement, professionalism, contribution, satisfaction and competency. Besides raising the students' knowledge, theirs' other skills will be challenged. Students will be encouraged actively to participate in achievement of the required knowledge by blended learning and students are more satisfied with this method in comparison with the lecture method. The positive aspect of this study is the use of modern teaching methods by using blended learning as a useful and efficient tool. In comparison the result of other study showed that the blended learning method is effective in increasing the students' learning rate. As this method of teaching increases the students' knowledge, satisfaction and attention[16].

There is a statistically significant difference between the achievement of students who used blended learning and the achievement of students who used lecture-based learning supporting the prior group[17]. The addition of blended learning to lecture based method provides students with opportunities for self-directed learning and a decentralized transfer of knowledge[18].

There are few limitations of this study. Pre-existing factors and other influences are not taken into account because variables are less controlled in quasi-experimental research. In addition to this human error also plays a key role in the validity of any project as discussed in previous modules. Moreover, the research must adhere to ethical standards in order to be valid. These will be discussed in the next module of this series.

Conclusion

The objective of the study is to determine the difference of blended learning teaching strategy and lecture-based teaching strategy on the learning outcome of the undergraduate nursing students in Lahore, Pakistan. Moreover, to explore the experiences of the nursing students enrolled in blended learning teaching strategy semester and lecture based teaching strategy semester among Generic B.Sc Nursing and Post RN B.Sc Nursing students. In the quantitative analysis the findings revealed that blended learning has significant relationship with awareness, learning strategies learning activities, evaluation among the experimental groups.

Recommendations

Following are the recommendations for adoption of the blended learning as a teaching strategy in the institutional and on the national level.

- The regularities should formulate the interventions and evaluation criteria regarding blended learning for the improvement of the learning environment. Ideally, evaluation should take account of, learning outcomes, participants' learning styles, and motivation, clarity of goals content, interaction, perceived value and satisfaction.
- Where possible, standardized, reliable and valid measures should be employed to facilitate replication and appropriate comparison.
- As with any new approach to delivering learning, comprehensive support for all stakeholders should be available as and when required.

References

[1]. Arnold-Garza S. The flipped classroom teaching model and its use for information literacy instruction. Communications in Information Literacy. 2014;8(1):9.

[2]. Doucet MD, Purdy RA, Kaufman DM, Langille DB. Comparison of problem-based learning and lecture format in continuing medical education on headache diagnosis and management. Medical education. 1998 Nov;32(6):590-6.

[3]. Jaggars SS. Choosing between online and face-to-face courses: Community college student voices. American Journal of Distance Education. 2014 Jan 2;28(1):27-38.

[4]. Yang GF, Jiang XY. Self-directed learning readiness and nursing competency among undergraduate nursing students in Fujian province of China. International Journal of Nursing Sciences. 2014 Sep 1;1(3):255-9.

[5]. Hsu LL, Hsieh SI. Factors affecting metacognition of undergraduate nursing students in a blended learning environment. International Journal of Nursing Practice. 2014 Jun;20(3):233-41.

[6]. Simpson V, Richards E. Flipping the classroom to teach population health: Increasing the relevance. Nurse Education in Practice. 2015 May 1;15(3):162-7.

[7]. Sadeghi R, SEDAGHAT MM, AHMADI FS. Comparison of the effect of lecture and blended teaching methods on students' learning and satisfaction. Journal of advances in medical education & professionalism. 2014 Oct;2(4):146.

[8]. Meguid EA, Collins M. Students' perceptions of lecturing approaches: traditional versus interactive teaching. Advances in medical education and practice. 2017;8:229.

[9]. Kouti L, Aghsam Z, Bargard MS, Javadi MR, Aghakouchakzadeh M, Eslami K. Comparison of the effectiveness of three educational methods (e-learning, lectures and blended) on pharmacy students' knowledge of non-prescription drugs. Pharmacy Education. 2018 Jun 27;18.

[10]. Yeh YC, Huang LY, Yeh YL. Knowledge management in blended learning: Effects on professional development in creativity instruction. Computers & Education. 2011 Jan 1;56(1):146-56.

[11]. Woltering V, Herrler A, Spitzer K, Spreckelsen C. Blended learning positively affects students' satisfaction and the role of the tutor in the problem-based learning process: results of a mixed-method evaluation. Advances in Health Sciences Education. 2009 Dec 1;14(5):725.

[12]. Vo MH, Chang ZH, Diep NA. Blended Learning Components Important to Student Learning: A Study on the Perceptions of Instructors. Turkish Online Journal of Educational Technology. 2017 Nov 1:123.

[13]. Ramnanan CJ, Pound LD. Advances in medical education and practice: student perceptions of the flipped classroom. Advances in medical education and practice. 2017;8:63.

[14]. Ramzan M, Ansar A. Learning and Teaching Styles at Wah Medical College; A Qualitative Approach. Annals of PIMS-Shaheed Zulfiqar Ali Bhutto Medical University. 2018 Jan 10;13(4):275-80.

[15]. Taroc RD, Paculba HL, Tan RA, Maghanoy MC. The Performance of Bachelor of Science in Maritime Education Students of Siquijor State College, Siquijor, Philippines in General Chemistry and Their Attitudes Towards the Subject. CNU Journal of Higher Education. 2018 Jan 16;9:197-206.

[16]. Pradhan D, Mukherjee V, Zakhary B, Sauthoff H. A23 EMERGING STRATEGIES TO TRAIN MEDICAL PROFESSIONALS: A Novel Blended Learning Course On Ultrasound For Rapid Assessment Of Acute Respiratory Failure. American Journal of Respiratory and Critical Care Medicine. 2017;195.

[17]. Cummings C, Mason D, Shelton K, Baur K. Active learning strategies for online and blended learning environments. InFlipped Instruction: Breakthroughs in Research and Practice 2017 (pp. 88-114). IGI Global.

[18]. Springer S, Springer A. How English Learners Say Blended Learning Improves Their Language Skills. InE-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2018 Oct 15 (pp. 985-988). Association for the Advancement of Computing in Education (AACE).