

Student Nurses' learning outcome and perceptions: Comparison of effectiveness of Online blended learning, flipped classroom approach and Online learning on course Nursing Research and statistics

Sakshi Chaturvedi^{1*}, Anjana Williams², Neerja Sood³, Hemchandra Pandey⁴

¹PhD Nursing Research scholar, Hemwati Nandan Bahuguna Government Medical University Dehradun, Uttarakhand, India cum Associate professor, Faculty of Nursing, Banasthali Vidyapith, Rajasthan, India, ²Professor cum Principal, Himalayiya College of Nursing, Himalayiya university, Dehradun Uttarakhand, India, ³Sr. Assistant professor, School of Health sciences, IGNOU-New Delhi, India, ⁴Professor cum Vice chancellor, Hemwati Nandan Bahuguna Government Medical Education University, Dehradun, Uttarakhand, India.

How to cite this article: Chaturvedi S, Williams A, Sood N, Pandey H. Student Nurses' learning outcome and perceptions: Comparison of effectiveness of Online blended learning, flipped classroom approach and Online learning on course Nursing Research and statistics . 2023;15(4):56-60

ABSTRACT

Introduction: Academicians are encouraged to work for advance mode of delivery in education under the National Education Policy 2020. In order to provide high-quality Nursing care, evidence-based practice (EBP) is essential, and this necessitates delivering quality nursing education for research. Successful researchers are essential for fostering a nursing workforce equipped with analytical, critical thinking, and problem-solving abilities. According to National education policy 2020. Research methods should be learned as early as possible.

Method: A mixed-method research approach was applied to compare B.Sc. Nursing 3rd year undergraduates' knowledge, attitude, skills, and active learning using quasi experimental design. Three modern educational styles flipped learning, online blended learning and online learning were selected to teach nursing research and statistics. Student nurses of B.Sc. Nursing 3rd year from three institutes are selected in this study using enumerative sampling technique.

Result: In flipped learning the value of mean was 5.27778 with a standard deviation of 0.9478, in online blended learning 5.055556 with a SD 1.177201 and in online learning 4.973684 with a SD 0.853826. Interest is shown by participants in the method the way research subject is taught these are the findings of the pilot study main study is in progress.

Discussions: In this applied research we have found flipped learning and Online Blended Learning has great impact on knowledge and active learning enhancement as compared to Online learning of UG Nursing students Studying Nursing research course.

Keywords: *flipped learning; online blended learning; online learning; knowledge; active learning; attitude, nursing research & statistics course and student nurses.*

INTRODUCTION

With the advent of new computing technologies, online education has

become increasingly popular.¹. In this method online platform available to teach student as live classes, e books

Corresponding author: Sakshi Chaturvedi, PhD Nursing Research scholar, Hemwati Nandan Bahuguna Government Medical Education University Dehradun, Uttarakhand, India

E-mail: chaturvedimrssakshi@gmail.com

can be provided, discussion can be done on online platform such as google meet, zoom, Microsoft team's platform are commonly used in such teaching method but again it is teacher centred pedagogy. In the fast-changing field of nursing research education, educators must adopt 21st-century instructional methods². Traditional techniques and unorganised online material may not be enough to prepare 21st century nursing students for their profession's problems. Blended and flipped learning help here².³ Traditional teaching approaches may neither engage students or equip them for nursing research's intricacies². 21st-century nursing education requires new teaching methods in a fast-changing society⁴ whereas flipped learning and blended learning make teachers as facilitator and mentor and student come in the centre. Blended and flipped learning can boost student engagement, active learning, and critical thinking. Healthcare practices and patient outcomes depend on nursing research. Nurses must be trained to conduct high-quality research. These creative teaching approaches to nursing research education can establish dynamic learning settings that promote inquiry-based learning, problem-solving, and critical research literature interpretation⁵. Interactive online modules and virtual simulations provide students better course engagement. Blended learning usually mixes online and face-to-face traditional instruction method. It combines the benefits of both methods to give students a more flexible and dynamic learning environment. Blended learning lets students' self-pace online activities, discuss with classmates, and receive tailored feedback from teachers. Blended learning can also encourage student participation. Students can actively participate in course content and collaborate with peers online through conversations and group projects⁵. In addition to these benefits, blended learning in nursing education has

certain limitations. For seamless online engagement, instructors must guarantee that all students have stable internet connections and adequate technology tools. Planning and instructional design are also needed to create effective online modules⁶. Faculty preparing quality online material takes effort and may require training. Less face-to-face connection makes it harder to keep students engaged throughout the course. Teachers must use regular feedback, interactive discussion forums, and real-time virtual sessions to engage students. There are many types of blended learning method which are blended or mixed with traditional teaching method such as one of them is flipped learning. Flipped learning is a growing educational method that changes classroom dynamics. Flipped learning involves delivering knowledge outside of class and leveraging class time for interactive activities. Students study pre-recorded video lectures or reading material before class in flipped learning⁷. They can learn foundational material at their own speed. Active engagement in classroom through conversations, problem-solving, panel flipped class room and collaborative projects etc. occurs in class⁷. Flipped learning encourages student-centred learning by transitioning from passive listening to active engagement. Students can practice class concepts outside of class and get rapid feedback from classmates and teachers. This improves comprehension and critical thinking. Flipped learning has its challenges. Educators must plan ahead to prepare pupils for class activities. If not addressed, technology access may also hinder students. Despite these obstacles, many teachers have successfully used flipped learning and seen great results¹⁰. Instructors can use online platforms and multimedia content development tools to generate interesting pre-class lessons for various learners. In this study online learning, online blended learning and flipped learning pedagogy

is applied to teach students of B.sc nursing 3rd year.

BACKGROUND AND PURPOSE OF THE STUDY

Nursing students' perceptions of a fundamental research subject among graduate nursing students reflected in dissatisfied way through many studies⁸. National education policy 2020 highlighted the importance of using modern technology in preparation of 21st generation learners especially for professional skills. In this pilot study student's knowledge, attitude, active learning was assessed during flipped learning, online blended learning and online class room teaching method for teaching Nursing research and statistics course to B.Sc. Nursing 3rd year students.

RESEARCH METHODOLOGY: RESEARCH APPROACH

A mixed-method research approach was applied to compare B.Sc. Nursing 3rd year undergraduates' knowledge, attitude and active learning level. **Research design:** quasi experimental non-equivalent post-test only control group design. **Demographic variables:** institution name, Roll no., name, age, gender. **Sample and Sampling technique:** Enumerative selection of students in Online blended learning (36), flipped learning (37), and online learning (38) in three nursing institutions of Haryana, M.P and Rajasthan. Inclusion criteria: Students included: 1. Studying in undergraduate nursing program in 3rd year in the selected Indian nursing council affiliated Nursing Colleges .2. Having willingness to participate

in the study.3. Having uninterrupted internet supply and smartphone/laptop/desktop/tablet. Exclusion criteria: The students whose attendance is short as per institutional policy (less than 80%) will be excluded from data collection. **Description of tool:** tool in this study consist of sections for assessment of Socio Demographic variables, Structured knowledge questionnaire(section-ii),The Modified Attitudes Toward Research (ATR) scale(section-iii),Modified checklist for assessing active learning(section-iv), Self -structured Evaluation checklist for assessing Research skill(section-v), Open ended question regarding experiences during learning Nursing research course (section vi).**Procedure for data collection:** data collection is done after teaching intervention and whole data is collected by paper pen method in the respective institute of students and later on submitted by research subject teacher to the researcher through mail. **Ethical consideration:** students were asked for their willingness in their research study and all procedure were very well explained by researcher in orientation session before starting the teaching intervention through google meet. Institutional permissions were also taken before starting the pilot study. **Plan for data analysis:**In this pilot study data is analysed using descriptive statistics only and identifications of fewthemesthrough students' responses.

RESULT

Total number of students from B.Sc. nursing 3rd year enrolled in this study were 111 out of which 69% were female and rest 31% were male students. mean

Table 1: Knowledge and attitude assessment in flipped learning, online blended learning and online learning

Knowledge assessment	Flipped Learning N=36	Online Blended learning N=37	Online learning N=38
Mean and Standard deviation	5.277778 0.974272	5.055556 1.177201	4.973684 0.853826
Range	2-7	2-7	2-6
Attitude assessment	21%	21 %	7.8%

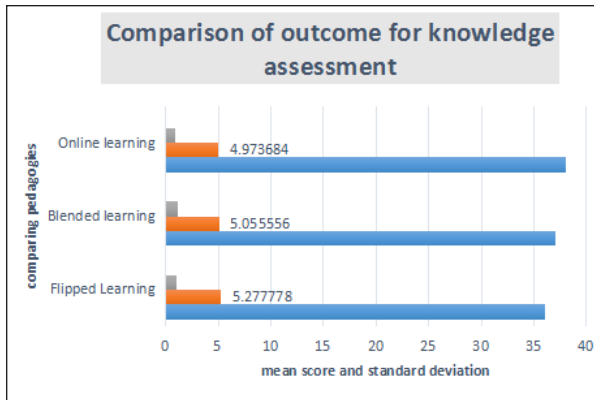


Fig. 1: comparing knowledge level among student of flipped learning classroom, online blended learning and online class room.

Table 2: active learning level in Flipped learning, online blended learning and online learning

Participants (score)	Flipped Learning (36)	Blended learning (37)	Online learning (38)
Highly active	3	2	1
Very active	15	12	13
Active	15	21	18
Less active	3	2	6
Not active s	-	-	-

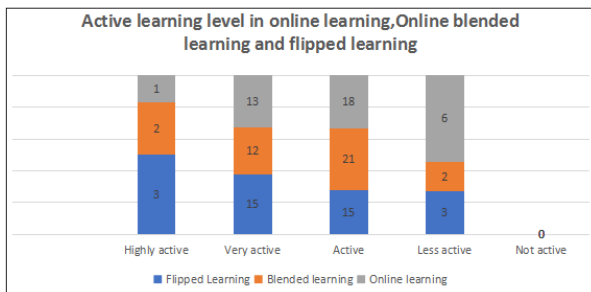


Fig. 2: Active learning presentation online learning, online blended learning and flipped learning

age group was 19 years in boys and 20 years in girls. In the pilot study UG student nurses' knowledge assessment during flipped learning (FL) was 5.277778; SD-0.97, Blended learning (BL) 5.05555; SD- 1.17 and in Online learning (OL) 4.973684 and SD:0.85 (Table 1 and Figure 1). Active learning was observed 3,2,1 in FL, BL and OL resp. (Table 2) flipped learning showed highest active learning level among all three teaching methods

(Figure 2). Good attitude for Nursing research was found in 21% of students in FL and BL whereas 7.8% in online learning (Table 1).

Qualitative analysis: open ended questions were asked at the end of quantitative data collection by interview method.

- **What do you think about Importance of research:** Can solve Nursing education problems, can solve clinical problems, can solve community problems, can solve management problems.
- **What can be the Role of a research nurse:** Assist in data collection, Follow protocol on patients, Check evidence .
- **What are your Views about benefits of teaching method:** Flipped learning is very Interesting, makes us busy, enhance Reading skills, activities are interesting.
- **What are problems faced by students in this teaching method:** Time consumption, has to read many things, some teachers say research is important at PG level makes us demotivated.

DISCUSSION

Online learning method shows comparatively less active learning development and less knowledge score when compared with flipped learning and online blended learning⁹. The above findings show that there is high impact of online blended learning¹⁰ and flipped learning on enhancing knowledge, attitude and active learning among student nurses. This result is also supported by previously conducted studies among nursing students^{11,12,13}. This study is a pilot study and it shows feasibility to apply selected teaching methods such as Online learning, online blended learning and flipped learning in conduction of main study for better learning outcome and active learning enhancement. Qualitative analysis shows sub theme such as interest in teaching Flipped learning method, development of reading skills, interest in activities Role of a research nurse for Assisting in data collection, Follow

protocol on patients, Check evidence. Importance of research reflect as: problem solving for clinical problems, community problems, management problems which reflect development of problem-solving skills, critical thinking among student and application of research studies in nursing practices.

LIMITATION

1. Sample size and duration of this study is comparatively small to generalise the result.
2. Skill was not checked as it was a pilot study only.

CONCLUSION

Flipped learning and online blended learning has enhanced research knowledge level and develop favourable attitude and a positive perception about Nursing research and statistics subject.

Conflict of interest: None

Grant: None

Acknowledgement

Authors are thankful to all of the students and research subject teachers who have participated with a great enthusiasm in our study.

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