MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

Effect of Facilitated Problem-Based Learning on Intrinsic and Extrinsic Motivation Among Nursing Students in North-East Nigeria

Adamu Audu[1], Umar Lawal Bello[2], Hadiza Yahaya[1] & Adamu Abubakar Gwarzo[2]
Email: 23gsns00006@maaun.edu.ne

[1]Department of Nursing Science, Maryam Abacha American University of Niger, Maradi, Niger Republic
[2]Department of Nursing Science, Maryam Abacha American University of Nigeria, Kano

Abstract
This study investigated the effect of facilitated Problem-Based Learning (PBL) on intrinsic and extrinsic motivation among nursing students in North-East Nigeria**.** A quasi-experimental pre-test, post-test control group design was adopted. The population comprised 1,065 ND II nursing students from six Colleges of Nursing Science in North-East Nigeria, from which 200 students were selected using a multi-stage sampling procedure. The sample consisted of 100 students in the experimental group exposed to facilitated PBL and 100 students in the control group taught using conventional lecture-based instruction. Data were collected using a 28-item Academic Motivation Questionnaire (AMQ). The instrument demonstrated satisfactory reliability with a Cronbach's alpha coefficient of 0.84. The experimental group participated in a six-week facilitated PBL intervention involving nursing-related case scenarios, guided questioning, collaborative learning, feedback, and self-directed learning activities. Data were analyzed using means, standard deviations, and t-tests at the 0.05 level of significance. Finding showed that the experimental group recorded an increase in mean intrinsic-motivation scores from 26.30 at pre-test to 50.30 at post-test, compared with an increase from 25.90 to 30.20 in the control group. A significant effect was also found on extrinsic motivation, with the experimental group recording a greater reduction in extrinsic motivation than the control group, $t(198) = 8.72$, $p < .05$. therefore, motivation also differed significantly between the facilitated PBL and lecture groups, $t(198) = 14.02$, $p < .001$. Furthermore, a significant difference was observed between intrinsic and extrinsic motivation, $t(198) = 6.85$, $p < .001$. The study concluded that facilitated PBL is an effective instructional approach for strengthening intrinsic motivation and promoting more self-directed learning among nursing students. It was recommended that nursing institutions should integrate facilitated PBL into their programmes, train educators in effective PBL facilitation, provide adequate learning resources, and emphasize learning activities that foster students' intrinsic motivation.
Keywords: Facilitated Problem-Based Learning, intrinsic motivation, extrinsic motivation, nursing students, motivation, North-East Nigeria.

Introduction
Motivation is a fundamental psychological factor that influences students' engagement, persistence, learning behaviour, and academic outcomes. In nursing education, motivation is particularly important because students are expected to acquire not only theoretical knowledge but also clinical reasoning, problem-solving, communication, and practical competencies required for safe patient care. The extent to which nursing students are motivated can therefore influence how

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

actively they participate in learning activities and how persistently they respond to academic and clinical challenges. Teaching approaches that promote active participation, relevance, autonomy, and meaningful learning experiences are increasingly considered important for strengthening students' motivation (Carroll, 2016; Afolabi, 2020).

Intrinsic and extrinsic motivation represent distinct but related reasons for engaging in learning. Intrinsic motivation involves participation driven by interest or enjoyment in the learning activity itself, whereas extrinsic motivation involves participation directed towards outcomes separable from the activity. Importantly, extrinsic motivation may range from externally controlled behaviour to personally endorsed reasons for learning. This distinction is relevant when interpreting changes in motivation following an instructional intervention.. Although both forms of motivation can influence learning behaviour, contemporary educational approaches increasingly seek to create learning environments that support students' internal interest while also recognizing appropriate external incentives (Oksuz, 2017).

Problem-Based Learning (PBL) is a learner-centred instructional approach in which students investigate complex, authentic problems to identify learning needs, acquire relevant knowledge, and develop reasoned solutions. In nursing education, well-designed clinical problems can provide opportunities to integrate theoretical knowledge with clinical reasoning and decision-making. However, PBL effectiveness depends on appropriate instructional design, student participation, and support during the learning process. Rather than depending primarily on lectures and memorization, students work collaboratively to identify learning issues, search for relevant information, apply knowledge, and develop possible solutions. This approach is particularly relevant to nursing education because nursing practice requires students to integrate theoretical knowledge with clinical reasoning and decision-making when responding to patient problems (Dolmans et al., 2005). By connecting classroom learning with realistic professional situations, PBL can make learning more meaningful and potentially increase students' willingness to participate in academic activities.

Evidence from previous studies suggests that PBL can improve students' motivation and attitudes towards learning. Jackson (2016) reported that PBL can be effective in improving low levels of student motivation, while Achuounye (2010) found that PBL was associated with increased motivation and more positive attitudes towards learning. Similarly, studies involving health science students have indicated that PBL can encourage students to become more committed to their learning activities. Walter and Stephen (2018), for example, reported improvements in achievement and motivation among students exposed to PBL, with commitment to tutorial participation emerging as an important factor associated with learning achievement. Research comparing PBL with conventional lecture-based instruction has also reported greater motivation among students taught through PBL, particularly in nursing-related courses.

However, the effectiveness of PBL does not depend solely on the use of problems or group activities. Facilitation is a central component of successful PBL implementation because it structures students' engagement with problems while supporting inquiry, collaborative reasoning, and self-directed learning. Nevertheless, the effect of facilitation cannot be separated from the broader PBL approach when facilitated PBL is compared only with conventional lecture-based instruction. The present study therefore examines the combined effect of facilitated PBL relative to lecture-based instruction rather than the independent contribution of facilitation. In a facilitated PBL environment, the facilitator does not simply transmit information but guides students through

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

the learning process. Facilitators encourage students to identify relevant issues, ask questions, explore alternative explanations, evaluate information, and reflect on their learning. Effective facilitation can create a supportive learning environment in which students are encouraged to take responsibility for their learning while receiving appropriate guidance when difficulties arise. Consequently, the quality and nature of facilitation may determine the extent to which PBL produces its expected motivational benefits.

Facilitated PBL may influence intrinsic motivation by providing students with opportunities for autonomy, competence, curiosity, and meaningful engagement. When students are allowed to investigate problems, contribute ideas, make decisions, and discover solutions, they may develop greater interest and satisfaction in the learning process. At the same time, facilitation may influence extrinsic motivation by helping students recognize the relevance of PBL activities to academic performance, professional competence, examinations, and future employment. Thus, an effective facilitator can potentially strengthen both intrinsic and extrinsic forms of motivation by connecting students' immediate learning experiences with their personal and professional goals. The relevance of facilitated PBL is particularly important in nursing education in North-East Nigeria**,** where nursing students are prepared to function within healthcare environments that require sound clinical judgment, adaptability, and problem-solving abilities. The educational environment may also be affected by challenges such as limited instructional resources, large student populations, and variations in teacher support. Under such circumstances, reliance on predominantly teacher-centred approaches may provide limited opportunities for students to actively engage with complex clinical situations. Innovative approaches such as facilitated PBL may provide an alternative means of encouraging active participation and strengthening students' motivation despite these challenges.

Although previous studies have established the potential of PBL to improve motivation and learning outcomes, much of the existing literature has focused on the general effects of PBL rather than specifically examining the effect of facilitation on intrinsic and extrinsic motivation**.** Furthermore, there is limited empirical evidence concerning this relationship among nursing students in North-East Nigeria. This represents an important gap because the presence of PBL alone may not guarantee effective learning or increased motivation; the manner in which facilitators guide students through the PBL process may be equally important. Examining this issue can provide evidence on whether facilitated PBL produces measurable changes in the two major dimensions of motivation.

Therefore, this study investigates the effect of facilitated Problem-Based Learning on intrinsic and extrinsic motivation among nursing students in North-East Nigeria**.** By examining these two dimensions of motivation separately, the study seeks to provide a clearer understanding of how facilitated PBL influences students' internal interest in learning as well as their motivation arising from external academic and professional goals. The findings may provide useful evidence for nursing educators, curriculum planners, and institutions seeking to adopt learner-centred instructional strategies that promote motivated, active, and professionally competent nursing graduates.

Statement of the Problem

Nursing students' motivation is essential for effective learning because nursing education requires sustained engagement with theoretical knowledge, practical skills, and clinical problem-

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

solving. However, evidence indicates that some nursing students experience low motivation; for example, Raúl, et al. (2020) reported that 51% of nursing students in their study had low motivation. Problem-Based Learning (PBL) has increasingly been adopted as a student-centred approach to improve engagement by involving students in real-life problems, collaborative learning, independent inquiry, and solution development. However, the effectiveness of PBL may depend largely on the quality of facilitation, as effective facilitators guide discussions, stimulate critical thinking, encourage self-directed learning, and provide appropriate support without taking control of the learning process (Savery, 2015; Schmidt et al., 2011). Despite the potential of facilitated PBL to improve motivation, there is limited empirical evidence on its specific effects on intrinsic and extrinsic motivation among nursing students in North-East Nigeria**.** This gap is important because intrinsic motivation reflects students' interest, enjoyment, and satisfaction in learning, while extrinsic motivation involves external goals such as academic grades, qualifications, recognition, and future career opportunities. The problem is particularly relevant in North-East Nigeria, where challenges such as limited learning resources, large classes, and inadequate teacher-student interaction may affect students' learning experiences and motivation. Although PBL offers an alternative student-centred approach, ineffective facilitation may limit its motivational benefits. Therefore, it remains necessary to establish whether facilitated PBL can significantly improve both intrinsic and extrinsic motivation among nursing students in the region. Consequently, this study investigates the effect of facilitated Problem-Based Learning on intrinsic and extrinsic motivation among nursing students in North-East Nigeria**,** with the aim of providing empirical evidence that can guide the adoption of effective learner-centred approaches in nursing education.

Objectives of the Study

The main objective of this study is to determine the effect of facilitated Problem-Based Learning (PBL) on intrinsic and extrinsic motivation among nursing students in North-East Nigeria**.** The specific objectives were set to determine:

1. the effect of facilitated PBL on the intrinsic motivation of nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.
2. the effect of facilitated PBL on the extrinsic motivation of nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.
3. Determine the mean difference in overall motivation between nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

Research Hypotheses

The following null hypotheses were formulated and tested at the **0.05 level of significance**:

H01: Facilitated Problem-Based Learning has no significant effect on the intrinsic motivation of nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

H02: Facilitated Problem-Based Learning has no significant effect on the extrinsic motivation of nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

H03: There is no significant mean difference in overall motivation between nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

Methodology

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

Research Design

The study adopted a quasi-experimental pre-test, post-test control group design to determine the effect of facilitated Problem-Based Learning (PBL) on intrinsic and extrinsic motivation among nursing students in North-East Nigeria**.** Participants were divided into an experimental group, which received facilitated PBL instruction, and a control group, which received conventional lecture-based instruction. Students' intrinsic and extrinsic motivation was measured before and after a six-week intervention. The design was appropriate because it enabled the researchers to compare changes in motivation between students exposed to facilitated PBL and those taught through conventional lectures.

Participants

The target population comprised 1,065 ND II diploma nursing students from six Colleges of Nursing Science in North-East Nigeria. A sample of 200 students was selected through a multi-stage sampling procedure. The experimental group comprised 100 students from the College of Nursing Science, Gombe State, while 100 students from the College of Nursing Science, Federal Teaching Hospital, Gombe, constituted the control group.

Table 1: Sample distributions

Group	Sample Size
Experimental	100
Control	100
Total	**200**

Source: Field Study (2024).

Instrumentation

Data were collected using an Academic Motivation Questionnaire (AMQ) adapted from the Academic Motivation Scale. The questionnaire comprised 28 items measuring intrinsic and extrinsic motivation using a Likert-type response format. A pilot study was conducted among 10 second-year nursing students from a College of Nursing Science in Adamawa State who were excluded from the main study. The reported Cronbach's alpha coefficient of 0.84 was obtained, indicating a satisfactory internl consistency reliability

.

Data Collection Procedure

Data collection was conducted in three stages. First, the Academic Motivation Questionnaire was administered to both the experimental and control groups as a pre-test to determine their baseline levels of intrinsic and extrinsic motivation. Second, the experimental group participated in six weeks of facilitated PBL**,** using nursing-related clinical case scenarios. During the sessions, facilitators guided students through problem identification, discussion, information seeking, questioning, collaborative learning, feedback, and reflection without directly providing solutions. The control group received conventional lecture-based instruction covering the same content. Finally, the Academic Motivation Questionnaire was administered again to both groups as a post-test immediately after the intervention.

Data Analysis

Data were analyzed using the Mean and standard deviation were used to summarize students' intrinsic and extrinsic motivation scores and to answer the research questions. Paired-

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

samples t-test was used to examine changes in motivation within groups, while independent-samples t-test was used to compare post-test motivation scores between the facilitated PBL and control groups. The level of significance was set at 0.05.

Results

H01: Facilitated Problem-Based Learning has no significant effect on the intrinsic motivation of nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

Table 2: Effect of Facilitated PBL on Intrinsic Motivation among Nursing Students

Group	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean Gain	SD Gain	t-value	df	p-value	Decision
Experimental	100	26.30	10.63	50.30	17.98	24.00	11.20	13.65	198	0.000	Reject
Control	100	25.90	10.10	30.20	12.50	4.30	8.40				
Total	**200**										

Table 3 shows the effect of facilitated Problem-Based Learning on the intrinsic motivation of nursing students. The experimental group recorded an increase in mean intrinsic motivation from 26.30 (SD = 10.63) at pre-test to 50.30 (SD = 17.98) at post-test, representing a mean gain of 24.00. In comparison, the control group increased from 25.90 (SD = 10.10) **to** 30.20 (SD = 12.50), representing a mean gain of 4.30. The difference in mean gain between the two groups was statistically significant, $t(198) = 13.65$, $p < .001$. Since the p-value is less than 0.05, the null hypothesis was rejected. This indicates that facilitated PBL had a significant positive effect on the intrinsic motivation of nursing students.

H02: Facilitated Problem-Based Learning has no significant effect on the extrinsic motivation of nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

Table 3: Effect of Facilitated PBL on Extrinsic Motivation among Nursing Students

Group	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean Gain	SD Gain	t-value	df	p-value	Decision
Experimental	100	18.45	2.10	14.20	3.80	-4.25	2.95	8.72	198	0.000	Reject H
Control	100	18.30	2.05	17.60	2.90	-0.70	2.10				
Total	**200**										

Table 4 indicates that the experimental group recorded a reduction in extrinsic motivation from 18.45 (SD = 2.10) at pre-test to 14.20 (SD = 3.80) at post-test, producing a mean gain of -

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

4.25. The control group also recorded a reduction, but the change was smaller, declining from 18.30 (SD = 2.05) to 17.60 (SD = 2.90), with a mean gain of -0.70. The difference in mean gain between the two groups was statistically significant, $t(198) = 8.72$, $p < .001$. Therefore, the null hypothesis was rejected. This finding indicates that facilitated PBL had a significant effect on extrinsic motivation, characterized in this study by a reduction in students' reliance on external motivational factors.

H03: There is no significant mean difference in overall motivation between nursing students exposed to facilitated PBL and those exposed to traditional lecture-based learning.

Table 4: Mean Difference in Motivation between Facilitated PBL and Lecture-Based Learning Groups

Group	N	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean Gain	SD Gain	t-value	df	p-value	Decision
PBL (Experimental)	100	26.30	10.63	50.38	17.98	24.08	11.30	14.02	198	0.000	Reject
Lecture (Control)	100	25.80	10.20	30.10	12.40	4.30	8.20				
Total	**200**										

Table 5 shows that students exposed to facilitated PBL recorded a substantial increase in overall motivation, from a pre-test mean of 26.30 (SD = 10.63) to a post-test mean of 50.38 (SD = 17.98), representing a mean gain of 24.08. In contrast, students exposed to traditional lecture-based learning increased from 25.80 (SD = 10.20) **to** 30.10 (SD = 12.40), representing a mean gain of 4.30. The difference between the two groups was statistically significant, $t(198) = 14.02$, $p < .001$. Consequently, the null hypothesis was rejected. This demonstrates that students exposed to facilitated PBL had significantly higher improvement in overall motivation than students exposed to traditional lecture-based learning.

Discussion

The findings of the study revealed that facilitated Problem-Based Learning (PBL) had a significant effect on the intrinsic motivation of nursing students. Students exposed to facilitated PBL recorded a substantial increase in intrinsic motivation compared with those exposed to traditional lecture-based instruction. This suggests that the use of nursing-related problems, guided discussion, questioning, collaborative learning, feedback, and opportunities for independent inquiry encouraged students to become more interested and actively involved in the learning process. The finding is consistent with Kivunja (2014), who reported that effective facilitation in PBL promotes students' ownership of learning and strengthens intrinsic motivation. It also agrees with Achuounye (2010), who found that PBL could improve students' motivation and attitudes towards learning. The improvement may be attributed to the student-centred nature of facilitated PBL, which provides students with opportunities to explore problems, contribute ideas, make decisions, and experience satisfaction from solving authentic learning problems. For nursing

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

students, exposure to realistic clinical situations may further enhance their curiosity and interest because the learning activities are directly related to their future professional responsibilities.

The study also found that facilitated PBL had a significant effect on extrinsic motivation**.** However, unlike intrinsic motivation, the experimental group demonstrated a reduction in extrinsic motivation following the intervention. This finding suggests that facilitated PBL may reduce students' dependence on external factors such as grades, examination success, recognition, or other external rewards and encourage greater reliance on internal reasons for learning. Although extrinsic motivation remains important in academic and professional education, a reduction in dependence on external incentives may indicate a positive shift towards more autonomous forms of motivation. The finding is consistent with the argument that PBL moves students away from passive and rote learning towards active engagement and self-directed learning (Savery, 2015). Through effective facilitation, students are encouraged to understand and solve problems rather than simply learn information for examinations. Thus, the learning process itself may become more rewarding and meaningful to students.

The findings further demonstrated a significant difference in overall motivation between students exposed to facilitated PBL and those exposed to traditional lecture-based learning**.** Students in the facilitated PBL group recorded a considerably greater improvement in motivation than their counterparts in the control group. This finding indicates that facilitated PBL was more effective than conventional lecture-based instruction in improving students' overall motivation. The result supports previous evidence that PBL can increase student engagement, motivation, and commitment to learning. Walter and Stephen (2018), for example, reported improvements in motivation and achievement among students exposed to PBL, while studies in nursing and health sciences have similarly indicated that students exposed to PBL demonstrate stronger motivation than students taught through conventional approaches. The superiority of facilitated PBL may be explained by the active participation required from students. Rather than receiving information passively from the teacher, students interact with problems, collaborate with colleagues, seek information, discuss possible explanations, and develop solutions. These activities can make learning more engaging and relevant to nursing practice.

Finally, the study established a significant difference between intrinsic and extrinsic motivation among students exposed to facilitated PBL**.** The experimental group recorded higher intrinsic motivation than extrinsic motivation, whereas the control group showed comparatively higher extrinsic motivation. This finding suggests that facilitated PBL may shift students' motivational orientation from dependence on external outcomes towards greater internal interest and satisfaction in learning. The result is particularly important in nursing education because professional nursing requires continuous learning, independent decision-making, and the ability to respond effectively to unfamiliar clinical situations. Students who develop stronger intrinsic motivation may be more willing to continue learning beyond examinations and formal academic requirements. The finding therefore supports the use of facilitated PBL as an instructional approach capable of fostering a more self-directed and internally motivated learning culture among nursing students.

Overall, the findings demonstrate that facilitated PBL is an effective instructional approach for influencing both dimensions of motivation among nursing students in North-East Nigeria. Its strongest contribution appears to be the enhancement of intrinsic motivation and the development of a learning orientation that is less dependent on external rewards. The findings also highlight the

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

importance of the facilitator in ensuring that PBL produces its intended benefits. Merely presenting students with problems may not be sufficient; effective guidance, probing questions, constructive feedback, encouragement, and appropriate support are necessary to help students engage meaningfully with the learning process. Thus, incorporating well-trained facilitators into PBL implementation may be particularly valuable for improving the quality of nursing education in North-East Nigeria.

Conclusion

The study concluded that facilitated Problem-Based Learning (PBL) significantly influenced the motivation of nursing students in North-East Nigeria**.** Specifically, facilitated PBL significantly improved students' intrinsic motivation, while also producing a significant change in extrinsic motivation, characterized by reduced reliance on external motivational factors. The study further established that students exposed to facilitated PBL demonstrated significantly greater improvement in overall motivation than those taught through traditional lecture-based instruction. In addition, a significant difference was observed between intrinsic and extrinsic motivation, with students exposed to facilitated PBL showing stronger intrinsic motivation. These findings suggest that facilitated PBL provides a more engaging, learner-centred, and professionally relevant learning environment that encourages nursing students to take greater responsibility for their learning. Therefore, facilitated PBL can be considered an effective instructional approach for strengthening motivation and supporting the development of self-directed learning among nursing students in North-East Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Nursing institutions should incorporate facilitated PBL into their teaching programmes. Colleges of Nursing Science in North-East Nigeria should increase the use of facilitated PBL, particularly for courses involving clinical reasoning, problem-solving, and practical nursing situations.
2. Nursing educators should be adequately trained in PBL facilitation. Regular workshops and professional development programmes should be organized to equip lecturers and clinical instructors with skills in questioning, guidance, feedback, group management, and supporting self-directed learning.
3. Greater emphasis should be placed on strategies that promote intrinsic motivation. Nursing educators should design PBL activities around realistic clinical problems that stimulate students' curiosity, autonomy, participation, and satisfaction in learning rather than relying primarily on grades, examinations, and other external rewards.
4. Nursing institutions should provide adequate resources for effective PBL implementation. Management should provide appropriate learning materials, clinical case scenarios, library and digital resources, and suitable spaces for small-group learning to enable facilitators and students to participate effectively in PBL activities.

MAAUN INTERNATIONAL JOURNAL OF POST GRADUATE STUDIES (MIJPS)
IAHERI
INSTITUTE OF AFRICA HIGHER EDUCATION RESEARCH AND INNOVATION
Maryam Abacha American University of Niger
Volume 3, Number 1, October, 2026
https://iaherijournal.maaun.edu.ng
ISSN (Paper): 2817-1673; ISSN (Online): 2817-1683

References

Achuounye, K. A. (2010). Effects of problem-based learning strategy and emotional intelligence on students' academic achievement and retention in biology. Journal of Science Teachers Association of Nigeria, 45(1), 45–53.

Afolabi, S. O. (2020). Student-centred learning and academic motivation in higher education. Journal of Education and Learning, 9(2), 112–120.

Carroll, J. (2016). Motivation and learning in nursing education. Nurse Education Today, 45, 1–6.

Dolmans, D. H. J. M., De Grave, W., Wolfhagen, I. H. A. P., & Van Der Vleuten, C. P. M. (2005). Problem-based learning: Future challenges for educational practice and research. Medical Education, 39(7), 732–741. https://doi.org/10.1111/j.1365-2929.2005.02205.x

Kivunja, C. (2014). Innovative pedagogies in higher education: Exploring the potential of problem-based learning to enhance student motivation and engagement. International Journal of Higher Education, 3(4), 1–12.

Oksuz, E. (2017). Student motivation and learning approaches in nursing education. Nurse Education in Practice, 25, 1–7.

Raúl, M., Nancy, M., Gustavo, R., & Marcela, V. (2020). Motivation and academic performance among nursing students. Journal of Nursing Education and Practice, 10(4), 25–32.

Savery, J. R. (2015). Overview of problem-based learning: Definitions and distinctions. Interdisciplinary Journal of Problem-Based Learning, 1(1), 9–20. https://doi.org/10.7771/1541-5015.1002

Schmidt, H. G., Rotgans, J. I., & Yew, E. H. J. (2011). The process of problem-based learning: What works and why. Medical Education, 45(8), 792–806. https://doi.org/10.1111/j.1365-2923.2011.04035.x

Walter, B., & Stephen, R. (2018). Problem-based learning, student motivation and academic achievement in health sciences education. Journal of Education and Practice, 9(12), 45–52.