



Effect of Mentoring on Learning Skills of Undergraduate Nursing Students in North-Western Nigeria

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Abstract

Background: The concept of how students learn is an important topic in education and crucial for improving the students' quality of learning. This brings about an increasing interest by policymakers and educators in how to encourage students learning. The study aimed to investigate the effect of mentoring on the learning skills of undergraduate nursing students in north-western Nigeria. **Methods and Materials:** Quasi quasi-experimental design was adopted for the study. The intervention was mentoring on learning skills, and learning skills were assessed before and after the intervention as pre-test and post-test respectively. The population of the study is undergraduate nursing students in the four departments of nursing sciences in north-western states, Nigeria. The required sample size was obtained using systematic sampling. Dennis Learning skills inventory was used for assessing the respondents' learning skills, while the mentoring action plan was used to deliver the mentoring intervention. **Results:** The pre-intervention excellent and very good levels of learning skills had the lowest aggregate mean percentages. The pre-intervention aggregate mean score was 2.06 (In maximum of 5). The highest post-intervention learning skills of the respondents were mostly around excellent, very good and good. The post-intervention aggregate mean score was 3.39. There was a significant difference between pre-intervention learning skills and post-intervention learning skills, $P < 0.001$ with an effect size of 0.7. **Conclusion:** Mentoring is effective in changing the way nursing students learn from inadequate learning skills to adequate learning skills.

Keywords: *Effect, Learning Skills, Mentoring, Nursing Education, Nursing Students*

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Introduction

The strategies by which individuals control themselves during learning are increasingly becoming important. It is crucial either in absorbing and utilising the existing knowledge or when laying down the foundation for the development of new knowledge (Alanoğlu *et al.*, 2021). This makes the focus of today's education to be on raising individuals with a sense of how to reach knowledge, be aware and control the learning process by learning how to learn. The concept of how students learn is an important topic in education and crucial for improving

the student's quality of learning (Özgür, 2019). The individuals who mastered how to learn have organised learning processes, applied transfer of learning, and solved difficulties; are mostly dynamic to development and change, and possess self-confidence with different strategies of learning (Tekkol & Demirel, 2018). These bring about an increasing interest by policymakers and educators in how to encourage students learning (Hora & Oleson, 2017).

Learning skills are defined as the learner's ability to employ various strategies in learning

to accomplish a study task (Saks *et al.*, 2020). They are strategies applied by students to achieve the learning objectives. Learning skills are those strategies that help student boosts and improve his/her study ability. Student applies learning skills in searching, organising, and retaining information (Odiri, 2021). Michael *et al.* (2020) asserted that learning skills are approaches applied to learning in order to help students organise and take in new information, as well as retain the information. They identified five main learning skills that are helpful to students in taking and retaining information. The identified skills are the art of note-taking, using a mind map, reading to oneself out loud, teaching others and time management. Students who lack positive learning skills are always at a disadvantage position and tremendously suffer from different types of negative consequences at various stages of their studentship life (Naqvi *et al.*, 2018). Therefore, teachers need to teach, train and nurture learners on the basic skills helpful in having a successful academic endeavour (Michael *et al.*, 2020).

Deniz (2013) suggests that inadequate learning skills such as ineffective note-taking, time management, test preparation and stress reduction substantially exist among undergraduate students. In a study on assessing study skills among a sample of university students in Iran, five of the participants (1.2%) had good study skills; 295 (86.8%), had moderate; and 40 (12%), had poor (Didarloo & Khalkhali, 2014). Also, another study to assess the effectiveness of structured teaching programmes on study skills among B.Sc. Nursing first-year students in College of Nursing, SVIMS, Tirupati. It shows that at the pretest 64 (79.9%) had inadequate study skills; 23 (25.8%) had moderate study skills and 2 (2.2%) had adequate study skills (Rani *et al.*, 2020). However, the skills in learning play an important role in the future professional practice of the students (Joseph *et al.*, 2017; Manoj, 2018). Our observations and discussions with nursing students and their

lecturers in Universities of north-western Nigeria reveal that student nurses lack understanding, and knowledge and are unaware of the importance of learning skills. They do not apply positive skills of learning in their study. In this situation encouraging appropriate and effective learning skills among nursing students is crucial to professional development. This requires different modes of learning and ways of knowledge acquisition and construction. Given this nurses found mentoring to be important in the learning process of nursing students (Mlambo *et al.*, 2021). Moreover, it is unexpected that only a few studies of the effect of mentoring on undergraduate students can be found in the literature despite evidence of its positive results (Corte *et al.*, 2022).

Mentoring is one of the notable techniques used in students' socialisation into the nursing profession. It is conducted by having an experienced nurse guiding the student to learn different kinds of roles needed to become a professional nurse (Metcalf, 2015). Hoover *et al.* (2020) maintained that mentoring involves establishing "a relationship between two people that have the specific purpose of one assisting the other to grow and develop and to increase their role effectiveness". Thus, Papastavrou *et al.* (2016) and Matlhaba (2016) strongly recommend a mentoring programme as an essential clinical teaching and learning strategy. Mentoring as a method of guiding, coaching, directing, teaching, motivating and encouraging is, therefore, a good method by which nursing students' learning process can be improved to meet future societal needs. Therefore, the research work was on the effect of mentoring on the learning skills of undergraduate nursing students in north-western Nigeria.

Methods and Materials

Study Design

A quasi-experimental design was adopted for the study. Quasi-experiments in the medical literature also called controlled trials without randomization involve an intervention; however, quasi-experimental designs lack

randomization, the element of a true experiment. In some quasi-experiments, even a control group is absent (Polit & Beck, 2010). The One-Group Pretest-Posttest quasi-experimental method was adopted for this study because of similarities in the study groups. The intervention was mentoring on learning skills, and learning skills were assessed before and after the intervention as pre-test and post-test respectively. Thus, randomisation in assigning groups was not involved since there was no control group.

Study Settings

The research was conducted in north western geo-political zone of Nigeria, comprising seven states, Kaduna, Kano, Sokoto, Katsina, Kebbi, Jigawa and Zamfara states. In the year of intervention (2020/2021), the zone constitutes four fully accredited departments of nursing from four different universities. These universities are Ahmadu Bello University Zaria, Bayero University Kano, Usmanu Danfodiyo University Sokoto and Federal University Birnin-Kebbi.

Population of the Study

The population of the study is undergraduate nursing students in the four departments of nursing sciences in north-western states, Nigeria. The students were those in three hundred and four hundred levels with a Cumulative Grade Point Average (CGPA) of less than 3.5. These students were selected because their CGPA manifested the need for improved learning skills and courses of study handling. The total number of the study population was obtained from the examination officers of the departments.

Sample Size Determination

The sample size determination was calculated using Cochran's sample size determination formula (Ajay & Micah, 2014). This research considered $P = 0.05$ where the probability of committing type I error is less than 5 % or $p < 0.05$. The sample was selected proportionately from the selected departments. However, the respondents that adequately attended the mentoring sessions were 112.

Sampling Technique

Four states comprising Kaduna, Kano Sokoto and Kebbi in north-western Nigeria were purposively selected for the research because they are the states with fully accredited departments of nursing sciences in north-western Nigeria. Simple random sampling was used in selecting three out of the four states. Departments of Nursing Science Ahmadu Bello University Zaria, Usmanu Danfodiyo University Sokoto and Federal University Birnin-Kebbi were selected for the study, while the Department of Nursing Science Bayero University Kano was selected for pre-testing. The sampling frame was obtained through the departments' examination officers, and the required sample size was obtained using systematic sampling after obtaining the sampling interval.

Instruments for Data Collection

Two instruments were used for data collection. These instruments include:

1. Dennis Learning skills inventory
2. Mentoring action plan

1. Dennis Learning skills inventory

Dennis Learning skills inventory, adapted from Dennis (2011) originally had six parts, textbook reading, note taking, memory, test preparation, concentration and time management. Three parts are added to it to suit this study, they are information processing, motivation/attitude, and writing. It is a self-administered questionnaire, designed to assess learning skills and is originally a point Likert scale, which means always, usually, sometimes, rarely and never for 5, 4, 3, 2, and 1 respectively. However, to suit the purpose of this study the researchers made the scales to be strongly agree (SA), agree (A), undecided (U) disagree (D) and strongly disagree (SD) for 5, 4, 3, 2, and 1 respectively. Copies of the instrument were given to five experienced educational psychology scholars at Ahmadu Bello University Zaria for validation. The instrument was pre-tested in one of the Universities that constitutes the study settings with 10% equivalent of the calculated sample size as respondents. The

pre-testing University was excluded from the intervention. The data generated from the pre-test was used in computing the reliability of the instrument, which was found to be 0.766 using Cronbach's alpha coefficient. The grading system for the instrument was: an average score of ≤ 3.00 for poor learning skills, 3.01-3.50 for fair learning skills, 3.51-4.00 for good learning skills, 4.01-4.50 very good learning skills, and 4.51-5.00 excellent learning skills.

2. Intervention of the Study

The researchers developed a mentoring action plan that was used as an instrument for intervention. It was used during the process of mentoring. The instrument is made up of the objectives of the mentoring, content, time allotted, mentoring aids, mentor's activities, mentees' activities and resources. The plan is an eight weeks intervention that includes an introduction session, mentoring on textbook/notebook reading, mentoring on SQ3R reading method, mentoring on time management, mentoring on memory enhancement, mentoring on concentration, mentoring on note taking, mentoring on test strategies and anxiety, mentoring on information processing, mentoring on Motivation, mentoring on writing, conclusion and E-mentoring. Copies of the instrument were given to five experienced educational psychology scholars at Ahmadu Bello University Zaria for validation.

Mentoring Action Plan

The intervention of the research was mentoring on learning skills. It involves group mentoring and e-mentoring on skills of learning, ranging from textbook/notebook

reading, time management, information processing, note taking, reading skills, test preparation, memory, concentration, test-taking strategy, motivation and writing skills. The mentoring activities were in stages and did not stress or overburden the students. The group mentoring intervention was carried out over eight weeks, with one hour of mentoring per week. However, e-mentoring was done throughout the semester through a WhatsApp group created specifically for mentoring purposes.

Method of Data Analysis

The collected data were organised and structured using SPSS version 26. The respondents' demographic data were presented in percentages using a table. The respondents' levels of learning skills were presented in tables showing percentages and mean scores. The aggregate mean score (decision mean was considered to be 3.0, minimum = 1, and maximum = 5) was presented in the tables. A paired t-test was used to determine the significant difference between pre and post-intervention learning skills at a 95% confidence interval.

Ethical Consideration

Ethical approval of the research was obtained from the Ahmadu Bello University Research Ethical Committee (ABUCUHSR/2021/001), and students involved in the study voluntarily with the right to withdraw at any time. Written informed consent was obtained from the students after a thorough explanation was given to them on all aspects of the research from beginning to end. Anonymity and confidentiality were maintained throughout the research.

Results

Table 1: Respondents' Characteristics N=112

Variables	Frequency	Percent
Age (Years)		
19-22	36	32.1
23-26	51	45.5
27-30	13	11.6
>30	12	10.7
Gender		
Male	22	19.6

Female	90	80.4
Level of study		
300 level	57	50.9
400 level	55	49.1
Marital status		
Married	34	30.4
Single	78	69.6

Table 1 shows that the 23-26 years age bracket had the highest (45.5%) percentage among the respondents. The age bracket >30 years had the lowest (10.7%) percentage. The majority (80.4) of the respondents were female. The respondents were about equally distributed between the 300 and 400 levels (50.9% and 49.1%) respectively. Most of the respondents (69.6%) were single.

Table 2: Respondents according to their Pre-intervention Aggregate Mean Percentage of Learning Skills (N=112)

Variables	Excellent F (%)	Very good F (%)	Good F (%)	Fair F (%)	poor F (%)	M (SD)
1. Textbook reading	1(0.9)	10(8.9)	21(18.8)	19(17.0)	61(54.5)	1.85(1.08)
2. Time management	7(6.3)	12(10.7)	20(17.9)	25(22.3)	48(42.9)	2.15(1.26)
3. Memory	1(0.9)	8(7.1)	29(25.9)	40(35.7)	34(30.4)	2.13(0.96)
4. Concentration	1(0.9)	14(12.5)	34(30.4)	37(33.0)	26(23.2)	2.35(1.00)
5. Note-taking	6(5.4)	11(9.8)	30(26.8)	26(23.2)	39(34.8)	2.28(1.19)
6. Test strategies	2(1.8)	7(6.3)	18(16.1)	38(33.9)	47(42.0)	1.92(0.99)
7. Information processing	4(3.6)	13(11.6)	27(24.1)	23(20.5)	45(40.2)	2.18(1.19)
8. Motivation	4(3.6)	3(2.7)	18(16.1)	24(21.4)	63(56.3)	1.89(1.05)
9. Writing	3(2.7)	6(5.4)	20(17.9)	30(26.8)	53(47.3)	1.76(1.05)
Aggregate Mean percent	3.2(2.9)	9.3(8.3)	24.1(21.5)	29.1(26.0)	46.2(41.3)	1.85(1.08)
Aggregate Mean Score						2.06(1.09)

Average score: ≤3.00 = poor learning skills; 3.01-3.50 = fair learning skills; 3.51-4.00 = good learning skills; 4.01-4.50; very good learning skills; 4.51-5.00 = excellent learning skills

Table 2 reveals that the pre-intervention excellent and very good levels of learning skills had the lowest aggregate mean percentages. The concentration learning skill had the highest (30.4%) percentage in good learning skills. The highest (56.3%) poor learning skill was found in motivation learning skills. The aggregate mean percent was higher among poor and fair learning skills (41.3 and 26.0) respectively. The concentration learning skill was having the highest mean score (M = 2.35, SD = 1.00). The lowest mean score was found on writing (M = 1.76, SD = 1.05). The aggregate mean was 2.6 (in maximum of 5).

Table 3: Distribution of Students according to their Post-intervention Aggregate Mean Percentage of Learning Skills (N=112)

Variables	Excellent F (%)	Very good F (%)	Good F (%)	Fair F (%)	poor F (%)	M (SD)
1. Textbook reading	16(14.3)	28(25.0)	37(33.0)	23(20.5)	8(7.1)	3.19(1.14)
2. Time management	30(26.8)	15(13.4)	46(41.1)	11(9.8)	10(8.9)	3.39(1.23)
3. Memory	16(14.3)	46(41.1)	33(29.5)	14(12.5)	3(2.7)	3.52(0.98)
4. Concentration	25(22.3)	47(40.0)	33(29.5)	5(4.5)	2(1.8)	3.79(0.91)
5. Note-taking	27(24.1)	32(28.6)	35(31.3)	10(8.9)	8(7.1)	3.54(1.16)
6. Test strategies	19(17.0)	31(27.7)	36(32.1)	24(21.4)	2(1.8)	3.37(1.06)
7. Information processing	37(33.0)	20(17.9)	40(35.7)	9(8.0)	6(5.4)	3.65(1.18)
8. Motivation	21(18.8)	22(19.6)	33(29.5)	17(15.2)	19(17.0)	.06(1.34)
9. Writing	12(10.7)	26(23.2)	40(35.7)	22(19.6)	12(10.7)	3.04(1.14)
Aggregate Mean percent	2.6(20.2)	29.7(26.5)	37(33.0)	15(13.4)	7.8(7.0)	
Aggregate Mean Score						3.39(1.13)

Average score: ≤3.00 = poor learning skills; 3.01-3.50 = fair learning skills; 3.51-4.00 = good learning skills; 4.01-4.50; very good learning skills; 4.51-5.00 = excellent learning skills

Table 3 indicates that the highest post-intervention learning skills of the respondents were mostly around excellent, very good and good. The highest percentage (33.0%) in excellent level was found in information processing. But memory had the highest (41.1%) at a very good level. The learning skill with the highest (17.0%) poor level was motivation, followed by textbook

reading and note-taking (7.1%) respectively. The aggregate mean percentage was higher in good and very good learning skills, 37 and 29.7 respectively. The table reveals concentration skill has the highest (M=3.79, SD=0.91) mean score. However, writing skill was having the lowest mean score (M=3.04, SD =1.14). The aggregate mean percentage was 3.39 (in maximum of 5).

Table 4: The differences in the Students' Learning Skills Overall Mean Score Before and after the Mentoring Intervention

Variables	Pre	Post	t	P	Cohen's D
1. Textbook reading	1.85	3.19			
2. Time management	2.15	3.39			
3. Memory	2.13	3.52			
4. Concentration	2.35	3.79			
5. Note-taking	2.28	3.54	-22.35	<0.001	0.7
6. Test strategies	1.92	3.37			
7. Information processing	2.18	3.65			
8. Motivation	1.89	3.06			
9. Writing	1.76	3.04			

Table 4 reveals that there was a significant difference between pre-intervention learning skills and post-intervention learning skills, P<0.001.

Discussion

The study was on the effect of mentoring on the learning skills of undergraduate nursing students in north-western Nigeria. The findings of the study reveal a pre-intervention low state of learning skills among undergraduate nursing students in north-western Nigeria. This is evident as the majority of the respondents had either fair or poor pre-intervention learning skills. This is contrary to the finding of a study conducted on the effectiveness of structured teaching programmes on study skills among B.Sc. nursing first-year students in the college of nursing, SVIMS, Tirupati, where it was found that at pretest 64 (79.9%) had inadequate study skills (Rani *et al.*, 2020). The difference between the two studies could be due to different instruments used in data collection and differences in scoring methods. However, similar to the finding of this study was a study on Assessing study skills among a sample of university students in Iran in which five of the participants (1.2%) had good study skills; 295

(86.8%), had moderate study skills; and 40 (12%), poor study skills (Didarloo & Khalkhali, 2014).

The implications of these findings are respondents were not likely to have good study habits that would make them practice effectively to achieve societal needs. A nurse needs to apply lifelong learning if effective nursing care is to be provided to society, which can only be possible if there is the application of appropriate learning skills and habits. The skills in learning play an important role in the future professional practice of the students (Joseph *et al.*, 2017; Manoj, 2018). Thus, the findings showed the need for guidance, coaching, teaching, directing and advice to improve the learning skills of the respondents that would help them even after graduation. Barzansky and Young (2017) asserted that an important way to support students and foster their global development at the University and in the future profession is mentoring. It could therefore be said that

the respondents of this study required an intervention that will help them in that respect. This is because they were not among the best students, and thus need to have a high or excellent level of learning skills for future practice.

In this study, the improvements were recorded across all the categories of learning skills post-intervention. However, the most notable improvements include information processing skills, time management skills, and concentration skills. This finding is in accordance with a study on Enhancing Study Skills among Freshman Nursing Students in an Intervention Study in Egypt, It reveals that before the study skills programme, 17.5% of students had high levels in relation to concentration items. Moreover, only 7.5% of them reported a high level regarding note taking and memory and 2.5% in relation to textbook reading items while none of them had a high level regarding items of test preparation and time management as well as the total score of their study skills whereas, 92.5% of student had moderate total study skills. On the other hand, after the implementation of the program, the result pointed to a general improvement in all dimensions of students' study skills with statistically significant differences ($p < 0.05$). The highest percentage was obtained in relation to both note-taking and concentration followed by textbook reading (55%, 55% & 52.5% respectively). In addition, 42.5% of students had a high level of total study skills (Ayoub & Abd El-Aziz, 2018).

There was a significant difference between pre-intervention learning skills and post-intervention learning skills ($P < 0.001$) with an effect size of 0.7. This finding is an indication that mentoring is effective in improving the learning skills of students. The effect of mentoring on general learning skills is manifested in the differences between pre and post-intervention general learning skills. The level of learning skills is more positive post-intervention. This is in line with a finding of a study by Ayoub and Abd El-Aziz (2018)

in which the findings indicate that the majority of studied students had moderate total study skills pre-program. The test book reading skills improved to 52.5% after the intervention, and there was a significant difference in all dimensions of students' study skills ($p < 0.05$). Thus, it contributes to helping students' persistence in learning processes. This is in accordance with the assertion that mentoring has been found to improve, directly or indirectly, students' persistence in college (Bordes-Edgar *et al.*, 2011). The implications of these findings are having evidence that mentoring could be used to improve the learning skills of nursing students.

Conclusion

There was a significant difference between the mean score of pre-intervention and post-intervention learning skills. Thus, mentoring is effective in changing the way nursing students learn from inadequate learning skills to adequate learning skills. Nurse educators in the Department of Nursing Science of Nigerian universities should collaborate with the management to provide mentoring services on learning skills to undergraduate nursing students.

Recommendations

1. The National Universities Commission (NUC) and Nursing and Midwifery Council of Nigeria (NMCN) should include formal mentoring in nursing education in the Nigerian universities
2. The management of the departments of nursing science in Nigerian universities should initiate and maintain the mentoring of students in their respective departments
3. Nurse educators in the Department of Nursing Science of Nigerian universities should collaborate with the management to provide mentoring services on learning skills to undergraduate nursing students
4. Departments of nursing sciences should provide time to undergraduate nursing students for utilisation of learning skills mentoring services

Conflict of interest

There is no conflict of interest in this study.

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