Perception of Nursing Students on Flipped Classroom Learning At a Selected University in Ajman, UAE

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Abstract
Background: *Flipped classroom is a student-centered learning approach that encourages active learning, where students engage with the material before class through videos or readings, allowing class time for discussions and application of concepts. This approach aims to make class time more interactive and student-centered, aiming for deeper understanding and application of concepts with higher information retention rates according to research.*

Objectives:
The objectives of this study were, to assess the Perception of Nursing Students on Flipped Classroom Learning and to associate the Perception of Nursing Students on Flipped Classroom Learning with their Demographic Variables.

Materials and Methods:
This study adopted a quantitative research approach with cross sectional descriptive design. The study population comprised of 195 Nursing Students at College of Nursing, Gulf Medical University, Ajman, UAE.

Major Findings of the Study:
Among 195 nursing students, 136 (69.7%) of students had high perception while 5 (2.6%) had low/poor perception regarding Flipped Classroom Learning (FCL). The study findings on association between Perception of Nursing Students on FCL and Study Pattern & Utilization of Learning Resources revealed 77.4% think that FCL will make them an active learner while 61% preferred to study individually.

Conclusion:
In conclusion, the researchers have identified from the study, the majority of nursing students, around 70%, had a positive perception of the flipped classroom learning approach. Additionally, a significant portion, 77.4%, believed that this method would help them become more active learners. Moreover, 61% expressed a preference for studying individually. This indicates a favorable attitude towards the flipped classroom model and a recognition of its potential benefits for student engagement and learning autonomy.
Key Words:
Nursing students' perception, Flipped classroom learning, Educational approach.

I. Introduction

Flipped classroom is an active Learning style and student-centered approach. It encourages active learning, where students engage with the material before class through videos or readings, allowing class time for discussions and application of concepts. It was used in 2007 by Jonathan Bergmann and Aaron Sams, Woodland Park High School chemistry teachers. This approach aims to make class time more interactive and

student-centered, aiming for deeper understanding and application of concepts with higher information retention rates according to research[1].

In a comparative study, the impacts of lecturing and flipped classrooms in virtual learning on triage nurses' knowledge and professional capability was assessed. The participants' mean age was 33.1±4.3 years. One month after the education, the mean score of triage knowledge among the nurses who were educated using the flipped classroom method (9.29±1.73) was higher than those who were educated via lecture sessions (8.45±1.788), and the difference was statistically significant (p=0.001). Assessments one month after the education showed that, the professional capability mean score of the nurses who were educated using the flipped classroom method (140.27±11.744) was higher than that of the nurses who were educated via lectures (132.84±10.817), and the difference was statistically significant (p=0.006). The effectiveness of this method led us to study the students perception of this learning style[2].

Flipped learning is new to most students, and it generally takes time to adjust to the pedagogy. Five factors are thought to affect a student's readiness for the flipped classroom. They are perceptions of workload, attitude towards active learning, relevant educational experience, metacognitive skills, and comfort with technology. To help all students benefit from flipped learning at the earliest stages of the class, an orientation is proposed that reduces the potential negative impact of each of these factors. Special advice is provided for first-year students, as they are inexperienced with flipped learning. Freshmen are still adapting to University life. So, there may be low-performing students who may need extra support to fully benefit from the pedagogy.[3]

Problem Statement: -
A Study to assess the Perception of Nursing Students on Flipped Classroom Learning at Selected University, Ajman, UAE
Aim:
This study aims at assessing the Perception of Nursing Students on Flipped Classroom Learning at a Selected University, Ajman, UAE.

Objectives:
• To assess the Perception of Nursing Students on Flipped Classroom Learning.
• To associate the Perception of Nursing Students on Flipped Classroom Learning with their Demographic Variables.

Hypothesis:
Ho1 – There will be no significant association between the perception of Nursing Students on Flipped Classroom Learning and their demographic variables.

II. Materials and Methods:
A quantitative research approach was used for this study with a Descriptive design. The Study population were all Nursing Students of Gulf Medical University, Ajman. Total Enumeration method was used and all the nursing students who fulfill the Inclusion criteria at Gulf Medical University, Ajman were included in the study within the data collection period. Approximately, about 214 nursing students were expected to participate in the study.

Study instrument & validation procedure:
Section A – Demographic Data of Nursing Students
Section B – Demographic Details of Families of Nursing Students
Section C - Study Pattern & Utilization of Learning Resources among Nursing Students.

Section D – Students Perception of Flipped Classroom Learning.
The questionnaire was devised by the investigator in Jordon in the year 2015. It was a validated one with a high reliability of 0.87 (Newman et al., 2016; Afrilyasanti et al., 2016; Nouri, 2016 & Khanova, McLaughlin, Rhoney, Roth & Harris, 2015)[4].

Ethical Considerations and Method of Data Collection:
Ethical approval was obtained from the CRC of College of Nursing and the IRB of Gulf Medical University, the Dean of College of Nursing and all Semester Coordinators. (Ref.No. IRB-CON-STD-29-FEB-2024). All the participants were explained about the purpose of the study and consent was obtained before proceeding.

Results of the Study:
Baseline Characteristics of Nursing Students and their Families:
Baseline variables showed that majority (75.4%) of nursing students were <22 years, 79.5% were females, nearly 1/3rd of them were in 1st year, majority (37.9%) resided in Ajman, 78.5% were staying in their homes, 69.7% were Asians by ethnicity, 49.2% of fathers and 41.5% of mothers were graduates. Totally 74.9% of fathers were skilled workers while 59.5% of mothers were home makers.

Data on Study Pattern & Utilization of Learning Resources among Students:
Majority (95.9%) of nursing students own a laptop, 98.5% have access to internet, 43.5% are doing part-time jobs in the weekends or after University hours, 39% reported having had minimum of 3flipped classroom sessions in the past at GMU, 77.4% think that FCL will make them an active learner. 61% preferred to study individually, 26.2% used the learning resources in the GMU library while 54.8% referred internet sources and 0nly 15.9% utilized e-portal.
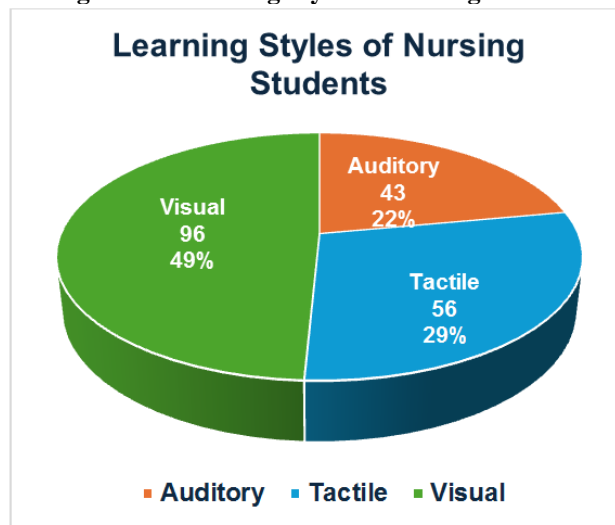
Figure 1 – Learning Styles of Nursing Students

Figure 2: Nursing Students' Perceptions on Flipped Classroom

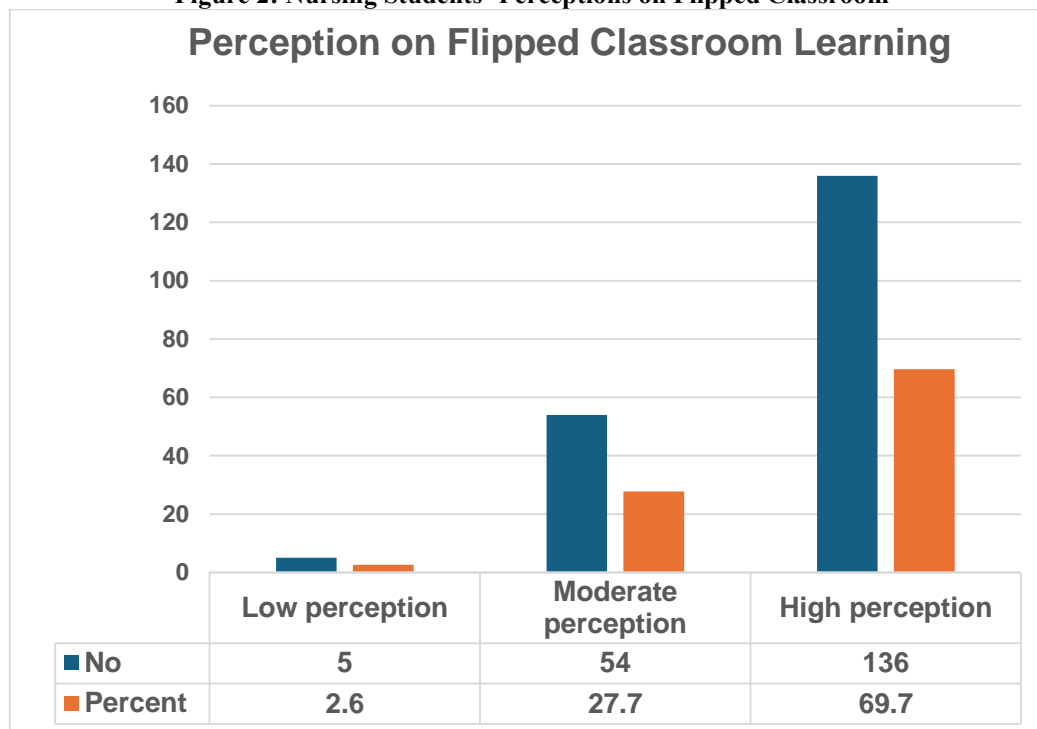|	Low perception	Moderate perception	High perception
No	5	54	136
Percent	2.6	27.7	69.7

Table 1: Association between the Perception of Flipped Classroom Learning among Nursing Students and their Demographic Variables

Baseline characteristics	Low perception	Moderate perception	High perception	χ^2 (p)
Age				
Less than 22 years	5(2.6)	45(23.1)	97(49.7)	4.680 (0.096
23 years and more	0	9(4.6)	39(20.0)	
Gender				
Female	5(2.6)	44(22.6)	106(54.4)	1.621 (0.445)
Male	0	10(5.1)	30(15.4)	
Years of study				
Year 1	1(0.5)	19(9.7)	39(20.0)	2.500 0.868
Year 2	1(0.5)	15(7.7)	39(20.0)	
Year 3	1(0.5)	7(3.6)	27(13.8)	
Year 4	2(1.0)	13(6.7)	31(15.9)	
Emirate of stay				
Abu Dhabi	0	2(1.0)	9(4.6)	10.716 (0.553)
Ajman	2(1.0)	25(12.8)	47(24.1)	
Dubai	0	11(5.6)	28(14.4)	
Fujairah	0	0	2(1.0)	
Ras Al Khaimah	0	2(1.0)	6(3.1)	
Sharjah	2(1.0)	14(7.2)	38(19.5)	
Umm al Quwain	1(0.5)	0	6(3.1)	
Place of Stay				
Home	5(2.6)	48(24.6)	100(51.3)	8.339 (0.080)
Hostel	0	0	11(5.6)	
Rented rooms	0	6(3.1)	25(12.8)	
Ethnicity of Students				
Asian	5(2.6)	37(19.0)	94(48.2)	2.343 (0.673)
African	0	14(7.2)	33(16.9)	
Others	0	3(1.5)	9(4.6)	

χ^2: Chi square test   *Significant (P<0.05)

The above table shows that, Chi square test was done to test the association. Findings revealed that, there was no significant association between the Perception of Flipped Classroom Learning among Nursing Students and their Demographic Variables.

Table 2: Association between the Perception of Flipped Classroom Learning of Nursing Students and the baseline details of their families.

Family Details	Low perception	Moderate perception	High perception	χ^2 (p)
What is your father's educational level				
Graduate	3(1.5)	29(14.9)	64(32.8)	3.587 (0.892)
Non-literate	1(0.5)	4(2.1)	13(6.7)	
Postgraduate	1(0.5)	6(3.1)	21(10.8)	
Primary education	0	5(2.6)	10(5.1)	
Secondary education	0	10(5.1)	28(14.4)	
What is your Mother's educational level				
Graduate	3(1.5)	25(27.2)	53(27.2)	4.161 (0.842)
Non-literate	0	4(2.1)	16(8.2)	
Postgraduate	0	4(2.1)	14(7.2)	

Primary education	0	6(3.1)	18(9.2)	
Secondary education	2(1.0)	15(7.7)	35(17.9)	
What is your Father's/Husband's occupation				
Healthcare profession	1(0.5)	5(2.6)	6(3.1)	
Skilled worker	4(2.1)	41(2.1.0)	101(51.8)	5.818 (0.444)
Unemployed	0	6(3.1)	16(8.2)	
Unskilled worker	0	2(1.0)	13(6.7)	
What is your Mother's occupation?				
Healthcare profession	2(1.0)	7(3.6)	11(5.6)	
Skilled worker	1(0.5)	18(9.2)	37(19.0)	8.095 (0.231)
Home Maker	2(1.0)	29(14.9)	85(43.6)	
Unskilled worker	0	0	3(1.5)	

χ^2: Chi square test   *Significant (P<0.05)

The above table shows that, there was no significant association between the Perception of Flipped Classroom Learning among Nursing Students and the Demographic Variables of their families.

Table 3: Association between the Perception of Nursing Students on Flipped Classroom Learning with their Study Pattern and Utilization of Learning Resources.

χ^2: Chi square test   *Significant (P<0.05)

Items	Low perception	Moderate perception	High perception	χ^2 (p)
Do you own a device like Laptop/Tab?				
No	0	3(1.5)	5(2.6)	0.566 (0.753)
Yes	5(2.6)	51(26.2)	131(67.2)	
Do you have access to good internet facilities at your home/room?				
No	0	2(1.0)	1(0.5)	2.329 (0.312)
Yes	5(2.6)	52(26.7)	135(69.2)	
How many flipped class room sessions have you attended in the past at GMU?				
1 time	2(1.0)	19(9.7)	47(24.1)	3.089 (0.345)
2 times	0	17(8.7)	34(17.4)	
3 or more times	3(1.5)	18(9.2)	55(28.2)	
Do you think a flipped classroom will make you a more active learner?				
No	0	24(12.3)	20(10.3)	**21.059**
Yes	5(2.6)	30(15.4)	116(59.5)	**(0.001*)**
What is your most preferred Learning style?				
Auditory Learners	2(1.0)	8(4.1)	33(16.9)	
Kinesthetic/ Tactile Learners	1(0.5)	18(9.2)	37(19.0)	3.132 (0.536)
Visual Learners	2(1.0)	28(14.4)	66(33.8)	
What is your preferred study style?				
Group	1(0.5)	14(7.2)	61(31.3)	**6.599**
Individual	4(2.1)	40(20.5)	75(38.5)	**(0.037*)**
How many hours do you approximately spend in Self Directed Learning per week?				
0-10 hours	1(0.5)	34(17.4)	91(46.7)	
11-20 hours	4(2.1)	15(7.7)	30(15.4)	9.544 (0.145)
21-29 hours	0	3(1.5)	6(3.1)	
30 and more hours	0	2(1.0)	9(4.6)	

The above table shows that, there was a significant Association between the Perception of Nursing Students on Flipped Classroom Learning, and that flipped classroom learning makes them an active learner and their preferred study style at 0.05 level of significance, while none of the other variables related to their Study Pattern and Utilization of Learning Resources had no association.

Hence the Null hypothesis Ho1 – There is no Significant Association between the compliance of clients to Antituberculosis therapy and selected Demographic Variables was accepted.

III.   Discussion

Findings showed that, majority of Nursing Students 136 (69.7%) had a high perception of Flipped classroom learning while, 54 (27.7%) had a moderate and 5 (2.6%) had a low level of perception on Flipped classroom learning respectively.

A similar study[5] on perception of 240 student nurses' on flipped classroom showed a positive attitude towards this type of learning. The use of video and Moodle showed that they had a positive attitude towards FCM. There was also a strong correlation on perceptions of motivation, self-engagement, enhanced and effective learning. The attitudes of low achievers were much more positive as compared to high achievers.

Mikkelsen[6] explored nursing students' experiences, perceptions and behavior during an Anatomy course designed according to the flipped-classroom approach among 48 first-year, nursing students in Denmark. Students expressed a very high degree of satisfaction with the eight videos assigned, which they generally watched on the day before class. 26% of the students believed that the videos were better than face-to-face lectures with regard to learning outcome, 56% felt they were of equal benefit, and only 18% benefited most from face-to-face lectures. (18%) preferred traditional teaching, 41% preferred flipped classroom and 41% did not prefer one approach over the other.

Another study by Yacout and Shosha[7] investigated nursing students' perceptions, satisfaction and experience towards Flipped Classroom educational strategy at Damanhour University Egypt. Total sample was 146 nursing students were recruited for the study. Two tools were used for data collection which includes Students; Basic Data Structured Questionnaire and Students' Perceptions to Flipped Classroom Structured Questionnaire. The study revealed that more than half of students showed a moderate level of satisfaction and positive perception regarding using FC in clinical activities. It also shows that short video lectures can be of significant value for nursing students. More than half preferred the traditional method of teaching while, more than one third of them preferred FC.

Significant differences were observed between students' gender, age, residence and their last academic achievement. Students mentioned "facilitate understanding topic, give ideas about class activities, and increase retention of information" as advantages of FC. Students also mentioned that the main challenges of FC were "need extra time to watch, no possibility of immediate feedback during watching videos and that FC cannot be applied in all nursing courses". The study concluded that Flipped Classroom is a promising alternative to traditional lectures in nursing education, that solve the problem of increased number of nursing students and shortage of staff. Besides, it helps students become more engaging in the classroom. It can result in a high level of student satisfaction, self-pacing and independency.

Findings revealed that, there was no significant association between the Perception of Flipped Classroom Learning among Nursing Students and their Demographic Variables. There was no significant association between the Perception of Flipped Classroom Learning among Nursing Students and the Demographic Variables of their families. There was a significant Association between the Perception of Nursing Students on Flipped Classroom Learning, and that flipped classroom learning makes them an active learner and their preferred study style at 0.05 level of significance, while none of the other variables related to their Study Pattern and Utilization of Learning Resources had no association. Hence, the null hypothesis was accepted.

A cross-sectional study [8] was conducted at the private nursing institute explore nursing students' perceptions and experiences regarding using active learning strategies. Participants were selected used a convenient sampling technique. The eighty-seven student participants are included in this study. The survey results revealed that a substantial proportion of nursing students strongly agree with the effectiveness and benefits of active learning strategies. Specifically, 40.2% strongly agree that active learning enhances their understanding of complex nursing concepts while 47.1% and 43.7% strongly agree that active learning activities are more engaging than traditional lectures. Furthermore, 55.2% strongly agree that active learning helps them retain and apply knowledge effectively, and 51.7% strongly agree that it encourages teamwork and collaboration among nursing students. Notably, 83.9% of students prefer active learning over traditional lecture-based teaching. Additionally, 35.6% strongly believe that nursing education can enhance the implementation of active learning strategies through learning objectives.

This study explored the perception of nursing students on flipped classroom learning and its association with demographic variables. The findings revealed that majority of the participants had a high perception on this type of teaching learning methodology. Almost three-fourths of the participants also think that Flipped

classroom learning will make them an active learner. Overall, these findings underscore the importance of understanding students' perceptions in the implementation of flipped classroom strategies. By tailoring instructional methods to align with students' preferences and needs, educators can optimize the effectiveness of flipped classroom initiatives and enhance student engagement and learning outcomes in nursing education.

This study has implications for Nursing Education and Nursing Research.

Study Limitations
- It was challenging to motivate students to respond to the survey.
- Study was limited to only the College of Nursing

Recommendations for Further Research
- A similar study can be conducted using more samples and multiple settings.
- A similar study can be done using true experimental research design.
- A qualitative study can be conducted to assess the benefits of Flipped class learning.
- A comparative study can be done among students in other disciplines.
- A study between traditional learning methods and flipped learning can also be carried out.

IV. Conclusion

This study explored the perception of nursing students on flipped classroom learning and its association with demographic variables. The findings revealed that the majority of the participants had a high perception on this type of teaching learning methodology. Almost three-fourths of the participants also think that Flipped classroom learning will make them an active learner. Overall, these findings underscore the importance of understanding students' perceptions in the implementation of flipped classroom strategies. By tailoring instructional methods to align with students' preferences and needs, educators can optimize the effectiveness of flipped classroom initiatives and enhance student engagement and learning outcomes in nursing education.

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