

Comparison of Undergraduate Nursing Student Satisfaction in Flipped Class (FC), Active Lecture Class (ALC) and Traditional Lecture Class (TLC)

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Abstract Background: In recent years, different educational approaches have been broadly applied to nursing courses. However, a comparison between these approaches and assessing the students' satisfaction has not been conducted. **Aim:** This study was designed to compare FC and ALC with the TLC model in teaching Medical-surgical courses to undergraduate nursing students and to assess the student response when they are asked to compare their experiences in FC, ALC, and TLC. **Results:** The mean age of the study participants was 22.19 ± 2.40 . In terms of marital status, the differences between satisfied and unsatisfied students were significant in TLC ($p=0.059$). A larger number of married students preferred TLC over ALC/FC and the difference between married and unmarried was significant ($p=0.036$). Regarding residential status, the differences between satisfied and unsatisfied students were significant in TLC ($p=0.034$). A larger number of rural residents preferred FC over ALC/TLC and the difference between rural and urban residents was significant ($p=0.036$). In terms of previous GPA scores, the difference between the students preferring FC over ALC/TLC was significant ($p=0.008$), where a larger number of students preferred FC over other teaching methods. **Conclusion:** The student satisfaction in FLC, TLC, and ALC varies based on their social/residential statuses as well as their study habits and out of class self-study hours.

Keywords: active lecture, learning experience, flipped class, traditional lecture, students satisfaction

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1. Background

Flipped class (FC) is a pedagogical practice that existed years before it was labeled [1]. The flipped class is simply described as "events that have traditionally taken place inside the classroom now take place outside the classroom and vice versa" [2]. The students embrace the responsibility to acquire knowledge in a flipped class, which is a highly engaging and interactive learning model [3]. It is an inclusive learning environment. The instructional approach in FC is diverse and may include individual or interactive group activities for the students, meanwhile, the learning resources may comprise of video tutorials and textbook contents [4]. The flipped class is effectively employed on course levels and have yielded better learning outcomes compared to traditional lecture class when tested in nursing students [5,6]. Average exam scores were higher in the FC model tested in nursing students. FC is shown to engage nursing students in a manner, which equips them substantially to address the

complexities and challenges of contemporary healthcare [7].

Active learning class (ALC) involves in-class discussion of students with the instructor [8] and peers [9]. Active learning can be effectively infused in classes with a large number of students [10]. ALC strategies to teach nursing students are shown to be effective, resulting in improvements in grades [11]. Mc Pherson and MacDonald [12] reported that ALC for nursing students has resulted in the contextualization of learning and has played a role in overcoming educational barriers. ALC model can positively cater to some of the commonly identified challenges in nursing students such as lack of motivation and concentration, class sizes, length of the allocated time and poor previous knowledge of students [13].

Traditional lecture class (TLC) involve didactic lecture without the active involvement of students in the learning process [14]. TLC may involve audio-visual support with didactic lectures [15]. The TLC model is the most commonly utilized teaching model for nursing courses [16]. There are several studies conducted, which compare TLC with FC and ALC in teaching nursing courses [17,18,19].

Nursing is a self-governing profession and it demands the ability and skills to essentially apply theoretical concepts to clinical practice [20,21]. Nursing courses should be conducted in a way that the students have a strong foundation knowledge and application skills [22]. FC and ALC models for teaching nursing students are shown to meet the aforementioned challenges. Medical-surgical courses are effectively and conveniently conducted employing FC and ALC models and it is a valid area of ongoing research in nurse education [23].

This study was designed to compare FC and ALC with the TLC model in teaching Medical-surgical courses to undergraduate nursing students and to assess the student response when they are asked to compare their experiences in FC, ALC, and TLC.

2. Methods

FC learning process was explained to students enrolled in Medical-Surgical courses. Learning resource was generated to be utilized before class comprising of video tutorials. In-class activities comprised of interactive group activities or individual practice exercises.

Activities to be conducted in the class were announced on the online blackboard system. Bit sized (chunk) learning was offered. Discussion with instructor and peers

was encouraged. The active class comprised of pair group activity e.g. class divided into pair and mark which pair-arm collaboratively give better answers to questions posed throughout. During lectures, the learners were allowed in-class writing. The think-pair-share activity was conducted e.g. students divided into pairs and allowed to reflect and discuss answers with their partners and give a combined answer.

Learning resource was generated ahead of the class on the blackboard. Lectures were conducted with audiovisual support. Students were encouraged to ask questions at the end of the class. The students completed a survey by the end of the course. The first part of the survey comprised of participant characteristics such as marital status, residence, previous GPA, after class study habits and general study habits (individual or group study). The second part comprised of six yes and no response set related to satisfaction and preferences in terms of teaching methods. The survey was conducted within the premises of the college. A convenient sampling technique was used owing to a small number of students registered in the courses. The students (N=206) participated following informed consent and the nature of survey participation was voluntary. The survey was analyzed on SPSS software v.20.0.

3. Results

Table 1

	N	STUDENT SATISFACTION IN ALC, TLC, AND FC																							
		Satisfied with FC				Satisfied with ALC				Satisfied with TLC				Prefer FC over ALC & TLC				Prefer ALC over FC & TLC				Prefer TLC over ALC & FC			
		yes		No		yes		No		Yes		No		Yes		No		YES		No		yes		No	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Marital status																									
Unmarried	35	21	60	14	40	15	42.9	20	57.1	30	85.7	5	14.3	32	91.4	3	8.6	24	68.6	11	31.4	13	37.1	22	62.9
Married	171	80	46.8	91	53.2	54	31.6	117	68.4	127	74.3	44	25.7	133	77.8	38	22.2	127	74.3	44	25.7	75	43.9	96	56.1
$\chi^2(p)$		2.031 (0.154)				1.659 (0.198)				0.059 (0.147)				3.396 (0.065)				0.482 (0.488)				0.036 (0.464)			
Residence																									
Urban	145	68	46.9	77	53.1	48	33.1	97	66.9	114	78.6	31	21.4	114	78.6	31	21.4	111	76.6	34	23.4	65	44.8	80	55.2
Rural	61	33	54.1	28	45.9	21	34.4	40	65.6	43	70.5	18	29.5	51	83.6	10	16.4	40	65.6	21	34.4	23	37.7	38	62.3
$\chi^2(p)$		0.891 (0.345)				0.034 (0.854)				1.565 (0.211)				0.037 (0.413)				2.644 (0.104)				0.890 (0.345)			
Previous GPA																									
1-1.9	41	22	53.7	19	46.3	12	29.3	29	70.7	30	73.2	11	26.8	33	80.5	8	19.5	29	70.7	12	29.3	16	39	25	61
2-2.9	84	42	50	42	50	26	31	58	69	61	72.6	23	27.4	69	82.1	15	17.9	63	75	21	25	40	47.6	44	52.4
3-4.0	81	37	45.7	44	54.3	31	38.3	50	61.7	66	81.5	15	18.5	63	77.8	18	22.2	59	72.8	22	27.2	32	39.5	49	60.5
$\chi^2(p)$		0.747 (0.688)				1.402 (0.496)				2.048 (0.359)				0.008 (0.780)				0.271 (0.873)				1.395 (0.498)			
Self-study at home																									
less than 1 hour	65	34	52.3	31	47.7	21	32.3	44	67.7	51	78.5	14	21.5	55	84.6	10	15.4	46	70.8	19	29.2	32	49.2	33	50.8
1-2 hours	79	35	44.3	44	55.7	19	24.1	60	75.9	59	74.7	20	25.3	64	81	15	19	57	72.2	22	27.8	29	36.7	50	63.3
more than 2 hours	62	32	51.6	30	48.4	29	46.8	33	53.2	47	75.8	15	24.2	46	74.2	16	25.8	48	77.4	14	22.6	27	43.5	35	56.5
$\chi^2(p)$		1.151 (0.562)				8.112*(0.017)				0.289 (0.866)				0.009 (0.328)				0.804 (0.669)				2.310 (0.315)			
General Study habits																									
individual	61	35	57.4	26	42.6	21	34.4	40	65.6	45	73.8	16	26.2	47	77	14	23	49	80.3	12	19.7	27	44.3	34	55.7
group	133	63	47.4	70	52.6	43	32.3	90	67.7	100	75.2	33	24.8	108	81.2	25	18.8	94	70.7	39	29.3	57	42.9	76	57.1
mixed (individual and group)	12	3	25	9	75	5	41.7	7	58.3	12	100	0	0	10	83.3	2	16.7	8	66.7	4	33.3	4	33.3	8	66.7
$\chi^2(p)$		4.620 (0.099)				0.034 (0.793)				(4.023) 0.134				0.536 (0.765)				2.277 (0.320)				0.492 (0.782)			

The mean age of the study participants was 22.19 ± 2.40 . Table 1 shows student's responses to the different types of teaching methods. In terms of marital status, the differences between satisfied and unsatisfied students were significant in TLC ($p=0.059$). A larger number of married students preferred TLC over ALC/FC and the difference between married and unmarried was significant ($p=0.036$). Regarding residential status, the differences between satisfied and unsatisfied students were significant in TLC ($p=0.034$). A larger number of rural residents preferred FC over ALC/TLC and the difference between rural and urban residents was significant ($p=0.036$). In terms of previous GPA scores, the difference between the students preferring FC over ALC/TLC was significant ($p=0.008$), where a larger number of students preferred FC over other teaching methods. Regarding the group of students divided based on the differences in self-study hours, the difference between the students preferring FC over ALC/TLC was significant ($p=0.009$), where a larger number of students preferred FC over other teaching methods. Based on general study habits, the difference between satisfied and unsatisfied students with ALC was significant ($p=0.034$).

4. Discussion

The purpose of this study was to compare FC and ALC with the TLC model in Medical-Surgical courses education in undergraduate nursing students and to analyze the student responses when they are asked to compare their experiences in FC, ALC, and TLC in terms of satisfaction and preferred teaching method.

The study shows that more students who were married preferred the traditional lecture format. It is also shown in previous studies that nursing students do not easily welcome a new teaching method and this study also supports the findings reported in similar studies [24,25]. The differences between satisfied and unsatisfied students were significant in TLC among those who were residing in rural and urban regions. Our study has shown that a larger number of rural residents preferred FC over ALC/TLC and the difference between rural and urban residents was significant. This finding is different than a previous study that has shown that rural student satisfaction is less in FC due to limited access to high-speed internet [26].

This study further shows the student's preferences of the teaching methods who were divided into groups based on their previous GPA scores. Within these groups, the differences between the students preferring FC over ALC/FC were significant, where a larger number of students preferred FC over other teaching methods. Interestingly, students with higher GPA scores preferred FC in larger numbers. This finding adds to the already reported results of FC preferences in different students with variations in academic backgrounds reported in earlier studies [27,28].

Finally, in our study, it was revealed that with the group of students divided based on the differences in self-study hours, the difference between the students preferring FC over ALC/TLC was significant, where a larger number of students preferred FC over other teaching methods. However, regarding the general study habits, the

difference between satisfied and unsatisfied students with ALC was significant. The students accustomed to individual study were more satisfied with ALC compared to students who were attuned in group study methods.

5. Conclusion

The student satisfaction in FLC, TLC, and ALC varies based on their social/residential statuses as well as their study habits and out of class self-study hours.

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