Team Based Learning: An Innovative Teaching Strategy for Enhancing Students' Engagement

Ibrahim Abd El Latif Ibrahim;Wafaa Fathi Sleem

Abstract

Background: Team based learning is a strategy that combines features of student-centeredness and problem solving attributes. It also enhances students' engagement which achieve desired outcomes such as retention; academic achievement and improved critical thinking. Aim: The present study aimed to investigate the effect of implementing team based learning on students' engagement in nursing administration course.

Subjects and Methods: A quasi experimental design was used. The study sample included 251 students who were studied nursing administration course during the first term of academic year 2015/2016, they were divided into two groups: experimental group (n=128) and control group (n=123). Data was collected by using four tools: Team based learning knowledge questionnaire, Readiness Assurance Test for Team based learning, Students' engagement questionnaire, Preference between team based learning and traditional learning questionnaire.

Results: There was highly statistically significant difference between experimental and control groups regarding academic challenges, active and collaborative learning, students - staff interactions and total students' engagement domains .there was no statistically significant difference between experimental and control groups regarding enriching educational experiences and supportive learning environment domains. The majority students of experimental group preferred team based learning more than traditional learning.

Conclusion: Implementing team-based learning method in nursing administration course enhances students' engagement, especially academic challenges, active and collaborative, student-staff interactions domains. The majority of the students were preferred team based learning method more than traditional method.

Recommendations: Team based learning method should be implemented in nursing administration course and other nursing courses in the faculty. Feedback questionnaire should be administered to collect views of students and meeting with students to let them express about their opinions after studying assigned courses.

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Key words: Nursing Administration Course, Student Engagement, Students, Team based Learning

Introduction

One of the worldwide trends of teaching in faculties has been a circulated toward greater student-centered, integrated, scientific application models. In addition, teaching strategies that raise problem solving and active study are steadily being encouraged. An instance of this kind of strategy that combines features of student-centeredness and problem-solving attributes is Team Based Learning (TBL) [1,2,3].

TBL is an active instructional strategy and small group learning approach that provides students with chances to apply theoretical knowledge through a series of activities that includes work individually, teamwork and provides feedback immediately. It is used for more than 100 students in large classes or smaller ones with less than 25 students, students are divided into group, each group consists of 5-7 learners in a single lecture hall [4,5].

Application of TBL carries repeated series of the following 3 levels: 1st section: learners study and look at material independently outside class; 2nd section: an individual readiness assurance test (IRAT) is answered through learners to assess their basic understanding of data and theories learnt in section I. The identical test is administered to pre-assigned group of 5 to 7 learners. The team bureaucracy a settlement approximately each solution in this group readiness assurance test (GRAT), 3rd section: students act in groups on assignments that offer the opportunities to apply knowledge in actual-world complicated situations [6].

TBL enhances peer teaching and learning, promotes active learning and engagement of students with course material and in-magnificence activities, inspire college students to take obligation for their own learning, and enables students to efficiently apply their course concepts in practice[7]

Student engagement is "the time and energy students devote to educationally sound activities inside and outside the classroom and the policies and practices that institutions use to encourage students to participate in these activities" .Student engagement can be assessed by the extent to which college students were engaging in educationally effective practices [8].Student engagement is complex; it includes many factors that interact in multiple ways to enhance engagement such as students and teachers. [9]

Student engagement has three dimensions. (1) Engagement behaviorally: Students who are engaged behaviorally having behavioral norms, as attending and participation, and would show absenteeism of negative or disruptive behavior. (2) Engagement emotionally: Students who engage emotionally would experience affective responses such as enjoyment, interest, or a sense of belonging. (3) Engagement cognitively: in this dimension students would be participated in their learning, would seek to go beyond the requirements, and would enjoy with challenges [10].

Student engagement has been found as a robust predictor of student positive behaviors and achievement. Students' engagement with high level is connected with higher test scores and attendance, even performance improvement. In the opposite way, students with low engagement levels are at risk of disrupting behaviors in lecture hall, absenteeism, and dropping out. Enhancing student engagement may help prevent these poor student outcomes [11].

Significance of the study:

Utilizing advanced teaching method of teaching will help students to have ability to translate and practice evidence into practice, problem solving skills, value the patient's perspective, collaborate with other members of the health care team, and be able to adapt to change. TBL is one of advanced teaching methods which will effective in selling student engagement; promote a deeper understanding of course content, and facilitating application of concepts in complex situations.

Aim of study

The study aimed to investigate the effect of implementing team based learning on students' engagement in nursing administration course and determine students' preference between TBL and traditional method among experimental group (study group) after implementing team based learning.

Research hypothesis:

H1: TBL will enhance students' engagement.

H2: Students will prefer TBL more than dedicated lectures (traditional method).

Subjects and Methods

1-Research Design:

   A- Quasi experimental design was used.

2-Setting:

The study was conducted at nursing administration department, faculty of nursing, Mansoura University. The faculty of nursing was established at 1994, it consists of eight academic nursing departments namely; nursing administration department, community health nursing department, critical care nursing department, psychiatric nursing department, medical-surgical nursing department, maternity and gynecological nursing department, pediatric nursing department, and gerontological nursing department.

3- Subjects

The study sample included 251 students who were studied nursing administration course during the first term of academic year 2015/2016.they were divided into two groups: experimental group (n=128) and control group (n=123).

4-Tools of data collection

Data was collected by using four tools: TBL knowledge questionnaire, Readiness Assurance Test for Team based learning, Students' engagement questionnaire, Preference between TBL and traditional learning questionnaire.

  1- <u>TBL knowledge questionnaire:</u>

It was developed by the researchers based on literature review [12,13,14,15]. The questionnaire consisted of two parts as follows:

The first part was concerned with personal characteristics of the students such as: age, gender, marital status, residence during studying, current level of the study, and previous academic achievement. The

second part was concerned with students' knowledge and experience about TBL, it was included 24 statements. These statements categorized into three domains as follow; principles of TBL, phases of TBL and benefits of TBL.

The response for the items were either Yes or No, its scores were 1 for No and 2 for Yes.

2- Readiness Assurance Tests for TBL

It was developed by the researchers guided by **Ahmed (2013))**[16], and contained two modules, the first modules' test was consisted of 18 multiple choice questions and the second modules' test was consisted of 20 multiple choice questions, each modules' test was applied twice through Individual Readiness Assurance Test (IRAT)and Group Readiness Assurance Test (GRAT).

Scoring system:

The response was zero for wrong answer and 1 for correct answer, the total score for the first modules' test was 18 marks and the total score for the second modules' test was 20 marks. Based on cut of point the total score of each module's test was classified into two categories which was used as indicator for students' readiness for TBL:

≥ 65 % indicated readiness for TB and < 65 % indicated that does not ready for TBL.

3- Students 'engagement questionnaire

It was developed by the researchers based on review literature **(16,17,18,19).**

This tool was aimed to assess quality and extent to which students engaged effectively in educational practices associated with high levels of learning and development.

It was included 42 items categorized into five domains namely as follows: Academic challenge, Active and collaborative learning, student-staff interaction, enriching educational experiences, supportive learning environment.

Scoring system:

The responses for the items were on 4 point likart scale ranging from never, very little or have not decide to very often, very much or done, these items were scored respectively from 1 to 4. The responses for academic challenge's items (8 –12) were on 4 point ranging from zero to ≥11, these items were scored respectively from 0 to 3. The responses for supportive learning environment's items (4-6) were 8 point ranging from not available to excellent, these items were scored respectively from 0 to 7 **(16,17,18,19).**

4- Preference between TBL and traditional learning questionnaire: It was developed by the researchers and guided by **Ahmed (2013)**[20].This tool was aimed to identify students' preferences for TBL or traditional lectures. This tool was included 20 items categorized into 3 domains namely: students' behavior according to TBL, faculty instructor – students' interaction according to TBL and learning environment according to TBL.

Scoring system:

The responses for the items were on 3 point likart scale ranging from disagree to agree. These were scored respectively from 1 to 3. Total score was determined as prefer TBL ≥ 75 % and does not prefer TBL< 75 % **Ahmed (2013)[20]**.

Methods:

Review of literature related to the aim of this study; tools of data collection were translated into Arabic by the researchers. Then it was reviewed by three experts. It was tested for its reliability by using Cronbach alpha test which indicated that TBL knowledge questionnaire, Cronbach alpha= 0.9. Students' engagement questionnaire, Cronbach alpha =0.8.Preference between TBL and traditional learning questionnaire, Cronbach alpha =0.9.

  Pilot study was conducted on 29 student who were studying nursing administration course during the first term of academic year 2015/2016, After the development tools of data collection to identify potential problems and obstacles that may be faced during period of data collection, also it assisted to estimate the needed time to complete the questionnaire, it was filled within 15 to 20minutes by every student. Students included in pilot study were excluded from the total studied students. Data obtained from pilot study were analyzed.

Implementation of TBL:

TBL was implemented in nursing administration course based on review literature through dividing students experimental (study) group who were studying nursing administration course during first term of academic year 2015/2016 into (20) teams; each team was consisted from five to seven students and two module of nursing administration course were implemented using TBL, the first   module was consisted of three lectures (planning - policies ,Rules and Regulations - budget), also the second   module was consisted of three lectures(organizing- organizational structure - job analysis and job description) these modules were implemented through administrating **seven session**.

First session was for orienting students about TBL and having study materials about first module, **second session**, students had RATs (IRAT –GRATs)and immediate feedback was given to students based on their answer in RATs, at the end mini-lecture was given about planning. **Third session**, discussion was managed and mini-lecture was given about policies, rules and regulations. **Fourth session**, discussion was managed and mini-lecture was given about budget, students had study materials about second module. **Fifth session**, students had RATs (IRAT-GRATs), immediate feedback was given to students, discussion was managed and mini-lecture was given about organizing. **Six session,** discussion was managed and mini-lecture was given about organizational structure. **Seven session,** discussion was managed and mini-lecture was given about job analysis and job description. Each session was lasted for one hour weekly for seven weeks.

Ethical Considerations

- Ethical approval was obtained from the research ethics committee of the Faculty of Nursing – Mansoura University.
- An official permission from the dean of the faculty of nursing to conduct this study.
- Privacy and confidentiality of the collected data were assured.
- Participation in research is voluntary and Participants were assured that withdrawing from the study will be at any stage without responsibility.

Statistical analysis

- By using SPSS (Statistical Package for the Social Sciences, version 22, SPSS Inc. Chicago, IL, USA) collected data were organized, tabulated and statistically analyzed. For quantitative data, the mean, standard deviation, Frequency and percentage were calculated. For qualitative data, comparison between two mean was done using T-test (independent T-test & paired T –test). P- Value, which was ≤ 0.05 and 0.01 were reflected as statistically significant.

Results

Table (1): personal characteristics of the studied sample, this table shows that the total studied sample were 251 students was divided into two groups (experimental group was consisted of 128 students and control group was consisted of 128 students). The majority of both groups were aged from 20 and more years, female, single, muslin, their residence during academic year, level of the study and previous academic achievement were rural, third level and very good respectively.

Table (2): Students' knowledge domains related to TBL among experimental group before and after implementing TBL method. This table shows comparison between students' knowledge domains mean score related to TBL before and after implementing TBL method among experimental group. According to the table there was statistically significant difference between principles of TBL, phases of TBL, benefits of TBL and total students' knowledge domains mean score related to TBL before and after implementing TBL method among experimental group (P=0.00).

Table (3): Students' knowledge domains related to TBL among control group before and after implementing TBL method. This table shows comparison between students' knowledge domains mean score related to TBL before and after implementing TBL method among control group. According to the table there was no statistically significant difference between principles of TBL, phases of TBL, benefits of TBL and total students' knowledge domains mean score related to TBL before and after implementing TBL method among control group.

Table (4): Readiness Assurance Tests for Team based learning among experimental group. This table describes students' readiness level for TBL among experimental group. According to the table the majority students of experimental group are ready to use TBL.

Table (5): Students' engagement domains among experimental group before and after implementing TBL method.

This table shows comparison between students' engagement domains mean score before and after implementing TBL method among experimental group. According to the table there was highly statistically significant difference between academic challenges, active and collaborative learning students – staff interactions , supportive learning environment and total students' engagement domains before and after implementing TBL method among experimental group   **(P = 0.000 , 0.01 , 0.01 , 0.001, 0.000 respectively**).but there was no statistically significant difference between enriching educational experiences domain before and after implementing TBL method among experimental group   (**P = 0.32**)

Table (6):   Students' engagement domains among control group before and after implementing TBL method, This table shows comparison between students' engagement domains mean score among control group before and after implementing TBL method. According to the table there was no statistically significant difference between academic challenges, active and collaborative learning, students – staff interactions, enriching educational experiences, supportive learning environment and total students' engagement domains before and after implementing TBL method among control group (P=0.22 , 0.39 , 0.45 , 0.36, 0.22, 0.90 respectively).

Table (7): Preference level for TBL among experimental group after implementing TBL method in nursing administration course, According to the table the majority students (90.6 %) of experimental group preferred TBL more than traditional learning

Table (1): personal characteristics of the studied sample

Characteristics	Experimental group (n=128)		Control group (n=123)		Total (n=251)
	No	**%**	**No**	**%**	
Age (years)					
• 18-	5	3.9	5	4.1	10
• 20-	123	96.1	118	95.9	241
Mean (SD)	20.14 (0.48)		20.33 (0.67)		20.23 (0.59)
Gender					
• Male	18	14.1	34	27.6	52
• Female	110	85.9	89	72.4	199
Marital status					
• Single	125	97.7	121	98.4	246
• Married	3	2.3	2	1.6	5
Religion	128	100.0	123	100.0	
• Muslim					251
Residence during academic year					
• Urban	59	46.1	23	18.7	55
• Rural	69	53.9	75	61.0	144

Current level of the study					
• Second level	10	7.8	8	6.5	18
• Third level	118	92.2	115	93.5	233
Previous academic achievement					
• excellent	40	31.2	20	16.3	60
• very good	82	64.1	86	69.9	168
• good	4	3.1	13	10.6	17
• Acceptable	2	1.6	4	3.3	6

Table (2): Students' knowledge domains related to TBL among experimental group before and after implementing TBL method.

TBL domains	Experimental group		T Value	P Value
	Pre TBL	**Post TBL**		
	Mean (SD)	**Mean (SD)**		
▪ Principles of TBL	12.32 (3.07)	19.96 (1.87)	24.04	**0.000****
▪ Phases of TBL	7.75 (1.86)	13.43 (1.21)	28.23	**0.000****
▪ Benefits of TBL	6.74 (1.82)	11.38 (1.05)	23.07	**0.000****
Total	26.81(6.60)	44.78 (3.56)	26.15	**0.000****

* Statistically significant at p ≤ 0.05

** Highly statistically significant at p ≤ 0.01

Table (3): Students' knowledge domains related to TBL among control group before and after implementing TBL method.

TBL domains	Control group		T value	P Value
	Pre TBL	**Post TBL**		
	Mean (SD)	**Mean (SD)**		
▪ Principles of TBL	12.48 (3.22)	13.08 (2.02)	1.77	0.07
▪ Phases of TBL	7.81 (1.83)	8.16 (1.30)	1.75	0.08
▪ Benefits of TBL	6.90 (1.97)	7.18 (1.24)	1.32	0.19
Total	27.20 (6.98)	28.43 (3.88)	1.73	0.08

* Statistically significant at p ≤ 0.05

** Highly statistically significant at p ≤ 0.01

Table (4): Readiness Assurance Tests for Team based learning among experimental group

TBL modules		Ready for TBL (≥65%)		Not ready for TBL (< 65%)	
		No	%	No	%
1st module	IRAT (n=128)	125	97.66	3	2.34
	GRAT (n=20)	20	100.0	0	0.0
2nd module	IRAT (n=128)	126	98.44	2	1.56
	GRAT (n=20)	20	100.0	0	0.0

Table (5): Students' engagement domains among experimental group before and after implementing TBL method

Students' engagement domains	Experimental group		T value	P Value
	Pre TBL	Post TBL		
	Mean (SD)	Mean (SD)		
▪ Academic challenges	24.39 (5.23)	29.07 (4.97)	7.53	**0.000****
▪ Active and collaborative learning	19.35 (3.83)	20.52 (3.75)	2.60	**0.01****
▪ Students – staff interactions	9.17 (3.38)	10.21 (3.44)	2.39	**0.01****
▪ Enriching educational experiences	26.33 (4.70)	25.82 (4.99)	0.99	0.32
▪ Supportive learning environment	20.85 (5.47)	23.02 (5.02)	3.42	**0.001****
Total	100.11 (14.76)	108.67 (15.39)	4.63	**0.000****

* Statistically significant at p ≤ 0.05

** Highly statistically significant at p ≤ 0.01

Table (6): Students' engagement domains among control group before and after implementing TBL method

Students' engagement domains	Control group		T value	P Value
	Pre TBL	Post TBL		
	Mean (SD)	Mean (SD)		
▪ Academic challenges	24.89 (4.97)	25.56 (4.21)	1.21	0.22
▪ Active and collaborative learning	19.71 (3.80)	19.30 (3.94)	0.85	0.39
▪ Students – staff interactions	9.61 (3.37)	9.34 (3.12)	0.75	0.45
▪ Enriching educational experiences	26.41 (4.73)	25.87 (4.70)	0.91	0.36
▪ Supportive learning environment	21.53 (5.33)	22.69 (7.09)	1.55	0.12
Total	102.17 (16.46)	102.79 (15.28)	0.32	0.74

* Statistically significant at p ≤ 0.05

** Highly statistically significant at p ≤ 0.01

Table (7): Preference level for TBL among experimental group after implementing TBL method in nursing administration course

Preference level for TBL	Post TBL	
	Experimental group	
	No	%
Preferred ≥75% (45-60)	116	90.6
Not preferred <75% (20-44)	12	9.4
Total	128	100.0

Discussion

Nowadays, active learning strategies are utilized in teaching programs to improve quality of learning process and improve students engagement learning process and achieve high levels of it, one of these strategies is team-based learning (TBL). It   builds   learners' strengths by providing them opportunities   to work effectively and collaborate as a team to achieve a common objective of learning, it also improved student engagement, presence, learning attitude, quality of communication process and maintain better academic performances [21,22,23].

Discussion of the study findings will includes four main divisions based on the aim of this study:

I. Students' knowledge and experience regarding TBL:

The present study revealed that students' knowledge regarding TBL (principles, phases and benefits) was enhanced   and the difference between two studied groups (experimental and control group) was statistically significant. It may be due to orientation session about principals, phases and benefits of TBL before starting the modules which they were studied. These results agreed with **Corbridge et al (2013)**[24] who reported that students have favorable knowledge and experience regarding TBL after implementing TBL in a nurse practitioner curriculum.it also in the same line with **Mennenga (2012)**[25] who reported that contributors had a generally favorable experience and knowledge regarding TBL after developing Psychometric testing of the TBL student assessment tool.

II. Nursing administration students' readiness assurance to TBL:

The present study revealed that the majority of experimental group was ready to use TBL method in studying nursing administration course. This may be due to orientation session about principals, phases and advantages of TBL before starting the modules which may be enhanced the students' enthusiasm and readiness toward this method. These results agreed with **Ahmed (2013)**[20] who revealed that the majority of nursing-interns were ready for using team based learning approach during implementing team building strategies program at Benha University hospital.

It also in the same line with **Clark et al. (2008)**[26], who pronounced that students were actively prepared and organized for their TBL sessions more than they did for their traditional lecture   because of their choice to do nicely at the Readiness Assurance Tests.

III. Students' engagement in nursing administration course:

The present study revealed that TBL enhanced students' engagement in nursing administration course more than traditional method of teaching among experimental group as compared with control group especially academic challenges, active and collaborative learning, students-staff interactions domains and the difference between two studied groups (experimental and control group) was statistically significant. It may be due to students' interaction and working together during TBL sessions.

These results agreed with **Huang, et al (2016)**[27] who informed that the application of TBL increased students' engagement in ophthalmology clerkship curriculum. It also in the same line with **Punja, et al (2014)**[21] who reported that team-based learning session improved student engagement and enhanced their understanding of course content also Similarly with **McMullen et al (2013)** [28] who revealed that TBL result in extensive enhancement in engagement amongst psychiatrists as compared to getting to know or learning through traditional lectures. These results also congruent by **Tan, et al (2011)**[29] who revealed that TBL increased students' engagement in clinical neurology course more than traditional method, similarly with **Chung, et al (2009)** [30] who revealed that implementing TBL in medical ethics education increased student satisfaction and engagement more than conventional didactics.

Concerning academic challenges domain, the present study revealed that TBL enhanced academic challenges domain among experimental group as compared with control group and the difference between two studied groups (experimental and control group) was statistically significant. This may be due to TBL helped students to be accountable for preparation and studying lecture before coming to class or it may be due to TBL helped students to work hard to meet lecturers' expectation. These results agreed with **Haj-Ali & Al Quran (2013)** [31] who reported that feeling with competition among teams made learning process more enjoyable and inspired them to be more prepared for class. Faculty members noted that students came prepared; they were aware and engaged during sessions. It also in the same line with **Wiener &Marz (2009)**[32] who revealed that implementing TBL in the intensive course format enhanced academic challenges among students and helped them to give their best through their participating in team assignment.

Concerning active and learning domain, the present study revealed that TBL increase active and collaborative learning domain among experimental group as compared with control group and the difference between two studied groups (experimental and control group) was statistically significant. This may be due to TBL encouraged students to ask questions, contribute to discussions or work with their colleagues on team assignments. These results agreed with **Altintas, Altintas&Caglar (2014)**[33] who showed that TBL was an efficient and effective approach to support active learning for fifth-year medical students who were attending an ophthalmology course. Also it is consistent with **Clark et al (2008)**[26] who founded that students in the TBL case management course rated participation significantly higher than those in the lecture-based pharmacology course.

Concerning students-staff interactions domain, The present study revealed that TBL increase students-staff interactions domain among experimental group as compared with control group and the difference between two studied groups (experimental and control group) was statistically significant. This

may be due to TBL helped students to discuss assignments with teaching staff, discuss ideas from their readings, lecture with teaching staff outside the theater or receive timely feedback from staff on academic performance. These results agreed with **Clark & Nguyen (2008)**[34]reported that students who were used TBL participated in lecture hall activities more than students in the traditional learning course. Similarly with **Hunt, Haidet, Coverdale & Richards (2003)**[22]found that TBL improving interactions among students and between students and the instructor.

Concerning enriching educational experiences domain, the present study revealed that TBL didn't enhance enriching educational experiences domain among experimental group and   control group and the difference between two studied groups (experimental and control group) was not statistically

significant. This may be due to all students have the same economic, social and ethnic backgrounds so

they have the same educational culture and experiences. These results agreed with **Levine et al (2004)**[35]who reported that students were perceived team-based learning as led to a more enjoyable and engaging learning experience and greater learning effectiveness as compared with traditional lectures.

Concerning supportive learning environment domain, the present study revealed that TBL increase supportive learning environment domain among experimental group as compared with control group and the difference between two studied groups (experimental and control group) was not statistically significant. This may be due to TBL environment helped students to improve their academic achievements or TBL environment helped students to be more socialize through interactions with their teaching staff, colleagues or working within teams.

These results agreed with **Cho et al (2010)**[36]who reported that TBL create the most appropriate educational environment for learning. It also congruent by **Parmelee & Michaelsen (2010)**[7]who said that TBL can shift students to knowledge application and critical thinking, create a positive classroom learning environment, and increase active learning.

VI. Students' preference between TBL and dedicated lectures (traditional method):

,the present study revealed that the majority of the experimental group preferred TBL method more than traditional method of teaching. This may be due to TBL method helps students to gain and retain studying material, communicate effectively with teaching staff to understand studying material or TBL created an effective learning environment.

These results agreed with **Frame, et al (2015)**[37]showed that students at Cedarville University School of Pharmacy who had two TBL courses first then went back to lecture based learning were preferred TBL more than traditional lecture, similarly with **Altintas, Altintas&Caglar (2014)** [33]who showed that most of the fifth-year medical students were preferred TBL implementation in an ophthalmology course more than traditional lecture method,   also consistent with **Livingston, Lundy & Harrington, (2014)** [38]who reported that physical therapy students were preferred TBL method in studying gross anatomy course. These results are not consistent with **Lubeck , Tschetter&Mennenga (2013)**[39]who reported that although some students enjoyed TBL, others voiced concern and frustration with the lack of lectures and their own

responsibility in the learning process, these results in contrast with **Bick et al. (2009)**[40] who reported that students were preferred lectures to TBL during their study which was aimed to evaluate the use of TBL in a clinical medicine course in a first year medical curriculum.

Conclusion

Implementing team-based learning method in nursing administration course enhances students' engagement, especially academic challenges, active and collaborative, student-staff interactions domains. The majority of the students were preferred team-based learning method more than traditional method.

Recommendations

- TBL method should be implemented in nursing administration course
- Students should be prepared for their new roles in active learning methods through hands-on orientations to new processes, expectations, and criteria for performance, as well as transparently and repeatedly explaining the pedagogical rationale for implementation.
- Feedback questionnaire should be administered to collect views of students and meeting with students to let them express about their opinions after studying assigned courses.
- Teaching staff should attend ongoing development program to enhance their teaching skills
- Further research should implement TBL method in other nursing courses which will help to assess effectiveness of TBL through evaluating students' performance and academic achievement .

Conflict of interest

The authors declare that they have no competing interests.

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