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Article

Maximising Classroom Environment by Blended Team-Based Teaching Approach with Continued Team Reallocation

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Abstract: Previously, we described the initial use of Flipped Team-Based learning (FTBL) defined as TBL approach combined with flipped classroom learning methodology, in which students previewed online lectures and applied their knowledge in different in-class activities. The purpose of the present study is to review the progress within this approach and to investigate how constant changes in team allocation can affect student's perception regarding this modified FTBL approach. Although students showed reluctance initially to get out of their 'comfort zone', our findings show that learners perceived the adoption of the continued random allocation, and became accustomed to this learning approach, which finally assisted them to enhance their team-work skills and classroom performance, to develop their reflective capabilities as well as improving their rapport building skills, learning and academic performance. Learners also believed that this learning strategy that creates critical incidents can simulate their future work environment as they might be expected to work in unfamiliar situations. Therefore, the present study indicated strong support for the modified FTBL method and was seen to work exceptionally well, despite some minor problems that students can experience working in a team and/or with different teammates in every session.

Keywords: team-based learning; flipped classroom; team re-allocation

1. Introduction

In 1984, General Physicians Professional Education (GPPE) suggested curriculum changes at all American medical colleges to increase active learning approaches, such as problem-based and student-centred learning approaches, to minimise lecture time creating integrated and interdisciplinary courses [1]. Later on, the Assessing Change in Medical Education (ACME) emphasised that medical education system must change in the way to help medical students becoming lifelong learners [2].

For many years, the development of team-based learning (TBL), originally developed by Dr. Larry Michaelsen in 1997 [3], has been the focus of educators at every level of education. Within two decades, numerous medical schools in USA and in the UK adopted and integrated TBL approach into their curriculum due to its potentials to improve learning outcomes and simulate the conditions of contemporary work environments [4-7]. Organisational behaviourist and anthropologist have been trying to analyse small group formation, team's dynamics and its output in order to understand the benefit of team-work in productivity and complex and multiple tasks accomplishment, which could not be completed by individuals working alone [8].

TBL allows a single instructor to manage multiple small groups simultaneously in one classroom, which requires consistent preparation and attendance. In addition, it is widely accepted that the presence of student-centric styles of teaching and learning can assist with the production of favourable outcomes in which students are asked to provide their perspective of quality in higher education institutions [6]. Furthermore, it has been reported that many staff in different organisations are spending most of their time in unfamiliar situations rather than the norms, in which their previous education prepared them for, which may reduce confidence in higher

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education to prepare graduates who are able to meet the needs of employers [9, 10]. Ciborra and Patriotta also reported that the lack of groupware and team-work in research and discovery (R&D) section of pharmaceutical companies (relevant job market to the students in this study) limits staff learning and innovation [11]. Consequently, it is proposed that higher education needs more than ever to focus on team-work skills development to encourage students to leave their comfort zones and get them in situations that can slightly unnerve them. Due to the positive outcomes mentioned above, many educational institutions follows team-based approaches to enhance students' group experiences during their under- and postgraduate studies. However, this is rather a sensitive area as working in teams should not be adopted as the most effective learning approach in all activities as it may lead to make riskier decisions than individuals [12], internal conflicts [13], reduce adaptability and independence [14] and may cause grade inflation [15]. Hence, educators need to consider these negative factors if adopting TBL within their curriculum to avoid inefficacious effects on students' experience and their skill attainment. Although the application of TBL or individual attainment of goals within the curriculum is still debatable, team-work literature greatly reflects that an effective team-work require a great degree of both task and outcome interdependence (when team members need to share resources, information, the outcomes and rewards) [16].

Although the implantation of new active learning strategy would be a challenging task for the educators, the adoption of an interactive learning approach is even more challenging for the learners, especially for those who have only experienced traditional way of learning in their past education. While this fact is not unique to international students, studying a degree that differs from the learner's mother tongue, with different teaching styles and assessments can often be a major adjustment for international students, which they may be experiencing for the first time. For example, studies reported 'language' and 'culture shock' as two major difficulties experienced by Chinese students studying an English degree in their first year of their study, which significantly affect their learning and performance over their course [8]. Psychological and sociocultural adaptations, as two of the cultural adjustment models, concern learners' physical/psychological well-being and students' sense respectively, showing how well they can 'fit in' to the new learning environment. Although TBL is a well-known educational approach that is being employed increasingly and has facilitated new approaches of teaching and learning, it cannot guarantee per se that effective and appropriate learning outcomes are achieved for all learners with different cultures and learning styles. Therefore, it is important to shed light upon perceptions of students' course effectiveness when applying TBL to validate that new learning implementation is congruent to better educational quality and increases in these learners' gains.

2. Research Aims and Objectives

The aim of this study is to investigate whether continued randomly assigning group membership in modified FTBL activities boosts student learning experience and satisfaction for second-year BSc Chinese students studying UK degree in China Medical University-The Queen's University Belfast (CQC) as a satellite campus in China. It was anticipated that this new strategy will more accurately simulate the conditions that BSc Pharmaceutical Sciences/Biotechnology graduates will experience when they enter the work environment and will help them to integrate into the organisational culture easier [11, 17]. This study follows a preliminary study that presented qualitative and quantitative evidence of the applicability and effectiveness of FTBL approach within a Pharmaceutical Sciences/Biotechnology module delivered in China, in which the students were allocated to pre-arranged (fixed) teams alphabetically [6, 18].

In our previous study, FTBL defined as TBL approach combined with flipped classroom learning methodology (students previewed online lectures and applied their knowledge in different in-class activities as fixed teams arranged alphabetically) was introduced to BSc students undertaking study within the CQC in 2016-2017 Academic Year, and was found to correlate with improvements in student's engagement and academic performance, compared to solely flipped classroom or traditional teaching styles. Students taught via FTBL achieved learning outcomes that were superior to classes taught using solely flipped classroom approaches, as well as those taught

using traditional lecture-based methods. Moreover, research questionnaire analysis of students' rankings of FTBL methods with respect to various aspects of intended instructional outcomes revealed significant increase in students' perceptions compared to other learning approaches mentioned above. However, students' feedback analysis revealed that learners were not satisfied by the team arrangements, and the associated need to work within the same team for the duration of the entire FTBL course [6, 18]. In an attempt to remedy this problem and further improve our FTBL strategy at CQC, it was suggested that the continued randomisation of student allocations to teams within classes, by computer generated random list, may increase students' interest, engagement, and interaction within the class, whilst also improving learning and overall academic performance.

The implementation of a new method of team allocation in current FTBL study involves students being randomly allocated to different teams throughout the semester, with various outcomes, including students' perceptions, being assessed on completion of this approach, with subsequent comparison to data collected during the previous study [6, 18]. One of the drawbacks in our previous FTBL strategy was the uneven task distribution within the team, where some members were totally dependent on other teammates who carry the majority of the work in spite of sharing the outcomes. It was hoped that this might be reduced by constant random changes in team allocation, which means that members can have more, less or equal capability to undertake the given tasks in comparison with their teammates.

Therefore, the aim of this study is to gain an insight into the opinions of students enrolled on the course with regard to FTBL, and in particular, how constant changes in team allocation and environment may affect their learning and academic performance in comparison with their previous team work experiences. The instructional principles associated with this method of teaching include requiring learners to examine and solve problems, work together from multiple perspectives, become responsible for their own learning process; and become aware of their role in the instructional process. As such, the objectives of the study include investigating what the students liked and did not like about this learning approach, determining whether students perceive that beneficial skills development and networking opportunities occur as well as ascertaining student opinions on fixed versus variable team allocation (in the context of their learning experience and academic performance) and examining whether students believe this learning approach will help them in their future career. The latter may enhance student employability chance, given that the professions have expressed a need for students who can communicate, value teamwork, solve problems, acquire breadth and depth of knowledge, and be life-long learners. With Regards to this, Johnson and Johnson state that learning interdependence and collaboration skills during higher education, which are crucial elements in work conditions, are the most important skills graduates can develop to enhance their employability chance and on-going career success [19]. The author also stated that team-work is adopted as the most desirable work design format.

To date, there is no published work available which investigates the constant reconstruction of teams within such teaching strategies and little is currently known about the feasibility of conducting this novel FTBL strategy. As such this study allows information to be gathered in relation to this, whilst also providing a practical application of doing so within FTBL environment.

3. Materials and Methods

The present invention relates to rearranging team members in every single session and analysing students' perception regarding this novel FTBL approach. We argue that whether FTBL with continued changes in team allocation allows students to learn from their peers greater than other approaches they experienced before. In previous FTBL study, group familiarity occurred over the course as students worked in fixed teams throughout the study that may lead to the ignorance of minority views within the team [20], in-group favouritism and out-group prejudice [21], and the acceptance of minimally suitable solutions [22], which may affect group decision making and effectiveness. The module in which this study was applied, "Industrial Pharmaceutics", is a compulsory 40-credit level-2 module delivered on a BSc(Hons) Pharmaceutical Sciences/Biotechnology degree within a satellite UK University campus in China. The module

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content was structured in a unique way to focus not only on science but also on the team decision-making aspects in order to reflect how team decision-making can deviate from the individual decision-making programmes.

This research investigates the effects of continued and randomised allocation in group situations on student perception and academic performance, which adopting a general definition of learning [23]. Deep learning and active engagement require the activation of many elements, which are related to human personality such as the body impulse, the intellect, emotions, desire, imagination and intuition. After delivering UK courses in China (CQC) for two years, the author felt that the level of student engagement and team work are still not as same as UK home students and many aspects of the students' personalities were still not being fully activated by the initial FTBL.

In this study, BSc level 2 students were allocated randomly in groups of six members for sixteen sessions. Before the introduction of modified FTBL approach, one-hour training session was delivered to the students and the rationale of the study was clearly mentioned, with great emphasises on the value of team work and communication skills that might be useful for their future career and professional life. Groups allocations were constantly changed and randomised by Microsoft Excel software for each session (to maintain the whole process of randomisation and allocation) [24]. Students were notified about their new group arrangement five days prior attending the sessions as they were requested to preview the lecture material by watching the recorded lectures available online and complete any given tasks before/during the sessions (assuming that all members are capable of performing the tasks). Each session consists of different tasks and peer assessments, where each group assigned to different activities randomly. Student classroom performance was monitored and scored by the teaching staff. As teams' arrangement changed continuously, the final score was calculated individually. Modified FTBL, by creating conflict and critical incident [25], therefore, presented an excellent opportunity to expose learners to a situation that they are expected to collaborate (working with different colleagues/teams) and experience the effectiveness of this model whilst perhaps giving them the chance to realise how bias was impairing their decision-making objectivity.

There were two major motivating factors for learners in this study. Firstly, there was opportunity to take part in a different team in each session that can result in greater, more enriched student interactions. Anecdotal evidence showed previously that there were no or very little interactions between some students even outside of the classroom and not many students were actually willing to participate in an effective group project. This might be due to the fact that Chinese students have a preferred list of students to socialize with and sometimes are not brave enough to step out of their friendship areas [26]. This modified FTBL, which gives learners the chance to meet new teammates in every session, may provide them the opportunity to integrate at a wider extend and realise the importance of acquiring team work skills that are crucial in order to be successful in their studies and future career. Furthermore, the presentation of final individual awards (top three students), by judging students' performance within the teams can motivate the students to be actively engaged in different activities and do not rely on other team members in order to get credits and complete the tasks over the course.

To investigate student perception regarding this novel approach in comparison with previous FTBL study, an online questionnaire prepared using SurveyGizmo online survey website, which has been deemed the most suitable approach, as it removes factors related to other methods, such as paper-based questionnaires, which may limit response rates, as well as negating the need for students to be on-site in order to respond, and thus increasing convenience. The questionnaire was developed with reference to existing team TBL literature [27-29], the previous FTBL evaluation questionnaire [6, 15] and feedback derived from discussions with researchers who possess expertise in educational research. In order to maximise response rates, the questionnaire was designed relatively short and the questions were largely in a closed-question format [29]. The resultant questionnaire makes use of Likert-type attitudinal (from 1 = strongly agree to 5 = strongly disagree), in addition to open questions, allowing for categorical data to be captured in the main, but also

allowing for additional detail and discussion to be obtained from respondents. The questionnaire (including the cover sheet) has been piloted with a number of current international postgraduate students (n=9) who are registered on Queen's University Belfast (QUB) postgraduate research programmes within the School of Pharmacy, and modified based on the feedback they provided, whilst some questions had previously been piloted on international undergraduate students enrolled on various courses at QUB and was subsequently approved by the QUB School of Pharmacy Research Ethics Board (School reference: 025PMY2017). The questionnaire consists of four sections, with 28 questions in total, which addressed various aspects of students' opinions of FTBL that makes use of randomly constructed teams:

- Section A (four questions) involves open-response questions, which consider the likes and dislikes of FTBL teaching method in general as well as random team allocation changes, in order to gather qualitative information about perceived issues which may be cultural, etc. in origin.
- Section B (thirteen questions) examines the students' views on modified FTBL and associated skills development, by way of five-point Likert scale attitudinal questionings and a multiple choice question, gauging their opinions on the usefulness of modified FTBL as an approach, and the ability of this technique to improve their academic performance, versus other team work activities, which students may have experienced before.
- Section C (ten questions) investigates students' general perceptions of the organisation and communication within the teams by way of five-point Likert scale attitudinal questioning.
- Section D (three questions) relates to demographic information, but does not include the collection of any identifiable information (Table 1).

Table 1. Demographic information of the participants.

Demographic variable		Percentage
Gender	Male	30
	Female	70
Age	18-20	55
	21-23	35
	24-26	10
Secondary school location	China	100
	Overseas	0

Cronbach's alpha coefficient (α) for section B and C of the questionnaire was computed to examine the internal consistency reliability, yielding values of 0.99 and 0.98 for those sections, respectively. Students were invited to participate in the study by the way of email communication and made aware that participation is voluntary. Two reminder emails were also sent during a two-week period in order to maximise the response rate. Collected data was processed using IBM SPSS 25 software, and statistically analysed using appropriate statistical tests with $p < 0.05$ set a priori. Students' academic performance, by their module results, was also compared with the previous results obtained by the initial FTBL study carried out in the previous academic year.

4. Results

Students were assigned into teams randomly from the first session as discussed. Resistant was received straight after the introductory session from few students reflecting that they do not want to work with some certain members. However, as mentioned earlier, the aim of this study was to break students from their common routines in order to reveal their cultural beliefs and enrich their learning and social skills. Learners were reminded that the team structure is changed constantly and they need to work with the same teammates only once.

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As the course was progressed, it was realised that participation of students in team activities was increased notably, while gaining skills to distribute the tasks and their confidence to lead the group was exceptionally improved in order to reflect the team overall view. Moreover, higher levels of engagement, mastery of subject specific knowledge and academic performance (judged by final examination) (Table 2) was perceived in comparison with previous student cohort who undertook initial FTBL approach. In addition, lower failure rate was reported and the number of students who received first- and second-class honours increased considerably in comparison with the previous year students.

Table 2. Summary of failure rate and Class Grades Honours of 2015-1016 and 2016-2017 entry year cohorts

Entry Academic Year	N	Failure rate in Level 2 (%)	Third-class Honours (%)	Second-class Honours (%)	First-class Honours (%)
2015-2016[1]	32	25	13	38	24
2016-2017[2]	62	12	10	47	31

Score range: fail, below 40; third-class honours, 40–49; Second-class honours, 50–69; first-class honours, above 70

1. Initial FTBL was introduced within in the second year of the degree
2. Denotes modified FTBL was introduced within in the second year of the degree

The individual perception gathered by the online questionnaire also demonstrated a deeper level of understanding of the course, highlighting higher level of collaborations, peer interactions and team work that was superior to the initial FTBL study applied (Table 3-4). Respondents reflected their perception regarding modified FTBL context in general in section A of the questionnaire (Table 3). In summary, learners mostly highlighted modified FTBL approach as a good strategy to improve their spoken English, confidence, teamwork skills, previewing material, cooperation and communication skills. In addition, it was noted that learners believe modified FTBL increases their concentration, helping them to remember the material better, encouraging them to follow the subjects in the class, giving them the opportunity to express their opinion and sharing resources. Negative feedbacks regarding modified FTBL mainly addressed lack of equal task distribution within groups, feeling anxious answering questions in front of others, bearing extra burden when their teammate is absent, finding hard to finalise the overall view when there are multiple opinions, feeling uncomfortable while sitting in the front row and finding difficult to cooperate with inactive team members. Most of those negative comments were expected in the hope that learners gradually step out of their comfort zone, and appreciate that it might take a lot of effort to apply extraverted tasks which finally assist them to gain worthy skills in learning, academic performance and collaboration while studying or working in a diverse environment.

Table 3. Examples of students' positive and negative comments towards modified FTBL approach in general

Student Positive Comments
"It can improve the ability of language expression and increase the teamwork ability"
"It can help me to prepare before class more carefully. Also it helps in oral English"
"It contributes to improve the ability to cooperate with others"
"It is a good method for us to practice our team-work skills"
"It provides the chance for students to communicate with each other"
"Encouraging us to follow the lectures"

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"Having the opportunity to say my opinion"
"A good way of study, we can reflect our own ideas about the subject"
"Providing chance for us to intercommunicate to learn more"
"We can discuss things together and everyone take part in the class"
"We can share resources with each other"
"Making us do more preview work before the lecture and students will be more active and concentrate better on the lecture"
"It can help me to highlight the important information of the slides of the courses also help to memorise"
"It is a chance for us to improve our communication and discuss with classmates. In addition, it can urge us to pre-study the lectures before classes"
Student Negative Comments
"Some teammates are less responsible for the tasks"
"Being nervous of answering questions in front of other students"
"Some students tried to escape the class after signing their names"
"Team discussion is so complex that makes hard for the team leader to reflect it properly"
"This form of class is not suitable for Chinese students' learning habit"
"I do not like to sit in the front row of the lecture theatre"
"Difficult to cooperate and communicate with inactive people"

Responses with regards to common questions between modified FTBL and initial FTBL studies [18] were compared and it was noted that respondents rated modified FTBL approach significantly higher ($p < 0.05$) as an effective learning strategy to become an efficient member in their future career and believe that this novel learning approach will assist them more with their professional development in comparison with the initial FTBL approach. Responses also show significantly higher ($p < 0.05$) motivation in graded team activities in modified FTBL method compared to the previous study [18]. In addition, although there were high demands by the students to assign their team members by themselves (not randomly) in both studies, this attitude significantly decreased ($p < 0.05$) in our modified FTBL approach.

Students were also asked to report if they learned and/or improved any of the skills listed in Fig. 1 within the modified FTBL study and their answers were compared with the result obtained in the initial FTBL approach [18]. Interestingly, the ability to influence others, self-awareness, applying knowledge to practical situations, time-management, leadership, self-study and innovative thinking skills were rated significantly higher ($p < 0.05$) in the modified FTBL study.

Other skills and learning habits development/improvement reflected by learners include awareness of knowledge, cooperation, group study, leadership, communication skills, the ability to communicate in English, understanding course content, concentration, listening skills, previewing lecture material, searching scientific contents and the ability to discuss the new taught content within the team.

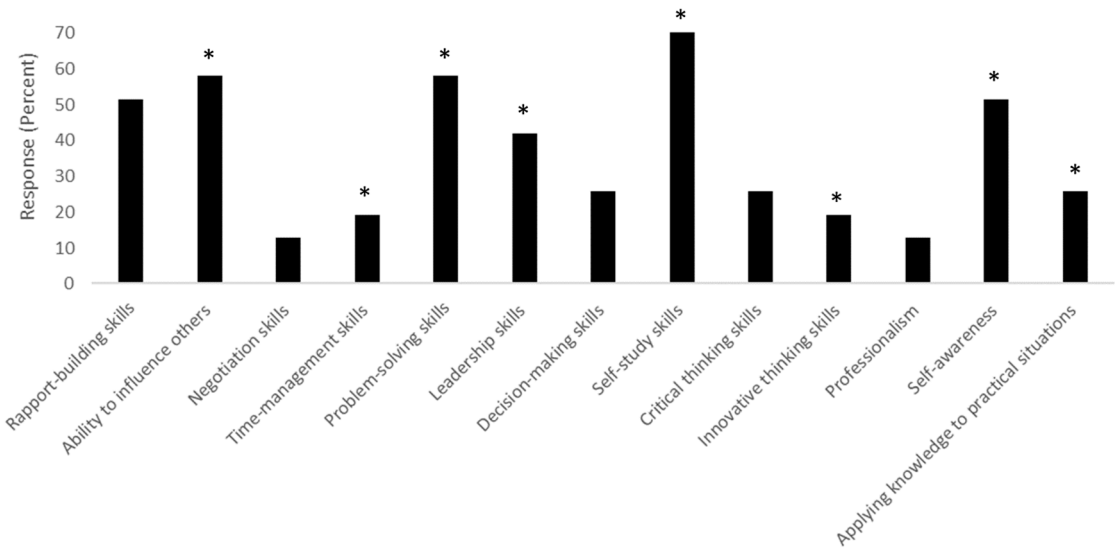

Figure 1. Students' perceptions regarding skills development by modified FTBL approach

* Denotes significant higher response rate in comparison with initial FTBL study ($p < 0.05$).

Table 4. Examples of students' positive and negative comments towards constant team reallocation

Student Positive Comments
"Become familiar with classmates and learn how to cooperate with different people"
"Everyone has the opportunity to answer questions"
"It could encourage us to study with different members and to create new views"
"It is a good method for us to practice our team-work skills"
"It provides a feeling of freshness"
"More equitable team structure!"
"Constant random selection was interesting and I like the fact that attendance was monitored"
"It increases the chance for everyone to get involved"
"It was fun to see who will be my teammates in the next session"
"More communication and better learning atmosphere"
"More chances to work with different classmate and get to know them"
"An interesting experience of teamwork to improve the ability of students' learning autonomy"
"It is more interesting and promote us to cooperate with each other"
"It's a brand new form of class which I have never had before, changing teammates every time makes me know more about how important the team discussion would be before each class"
Student Negative Comments
"I hope we can have some team, each of which includes students and teacher"
"I would prefer to work with the same sex"
"learning less from lecturer"
"There is no need to change teams' allocation in every session. Maybe we can change groups every week or every two weeks."

Descriptive statistics regarding student perception in Section B and C of the questionnaire are reflected in Table 5.

Table 5. Descriptive statistics of section B and C of online questionnaire

Section B questions	**Mean**	**Std. Deviation**
FTBL with continued changes in team allocation made me want to learn from different peers	3.74	1.24
FTBL with continued changes in team allocation allowed me to learn from different peers	3.61	1.14
Being taught in this way allowed me to develop my team working skills more than other team work-based activities that I have experienced	3.71	1.21
Using FTBL with continued changes in team allocation in class has made me more aware of the usefulness of collaboration	3.77	1.06
Being taught in this way has improved my ability to seek out information compared with working in the same team for the duration of the semester	3.94	1.03
Being taught in this way will allow me to perform better within my degree	3.61	1.09
I believe that FTBL with continued changes in team allocation will help me to be more active within the team in comparison with working within a fixed team*	3.55	1.06
I believe that blended TBL with continued changes in team allocation will help me to remember what I have been taught more than working within a fixed team	3.65	1.08
I believe that FTBL with continued changes in team allocation will help me to perform effectively in my future career	3.65	1.05
I believe that FTBL with continued changes in team allocation will help me to become an effective team member in my future job	4.10**	0.87
Section C questions	Mean	Std. Deviation
I am happy to share class notes and appropriate study materials with my peers during blended team-based exercises	3.81	1.11
I believe that the feedback I provided to my peers during FTBL learning will assist with their professional development	3.74**	0.97
I believe that the feedback I provided to my peers during FTBL learning will assist with their academic development (i.e. their ability to know, understand, and use knowledge)	3.71	0.94
I would prefer to choose the members of my team myself, rather than this being chosen randomly	2.61***	1.20
In comparison with working within a fixed team, continued changes in team allocation have encouraged me more to study with my peers outside of the classroom	3.45*	1.09
In comparison with working within a fixed team, continued changes in team allocation have increased my interest in the course material	3.68 *	1.14
In comparison with working within a fixed team, continued changes in team allocation have given me more opportunity to get to know my classmates better and collaborate with them more effectively	3.87*	0.99
The grading of team-based activities motivated me to more actively engage in the class	3.97**	1.05
There should be more FTBL approach within my degree course	3.16	1.16
The presentation of an award for performance in team-based activities motivated me to more actively engage in the class	3.71	1.04

* Denotes new question implemented in the research questionnaire compared to initial FTBL study

** Denotes the result was significantly higher than the previous FTBL study

*** Denotes the result was significantly lower than the previous FTBL study

$p < 0.05$

4. Discussion

Giving the opportunity to learners to step out of their shadows and comfort zones by modified FTBL strategy showed improvement in their performance and assisted them to develop new skills, demonstrating greater levels of mutual performance monitoring and back-up behaviour, which is in line with Laird study and provides further evidence that effective learning is both experience and cognitive based [23]. Students reflected that modified FTBL helped them to become more focused on their learning and to understand team dynamics and tasks distribution at the expense of a more holistic learning experience, which they may require in their future career and academic life.

The results in this study are in agreement with literature proposing that random team arrangement offers enhanced and positive learning outcomes for undergraduate students, increasing task work and team work capabilities amongst learners [30]. This paper suggests that modified FTBL benefits both high-performing and low-performing members within the team. By constant reallocation of team members, some highly active participants who usually feel pleased to work within their social group, acting as group leader, had the chance to work with other highly active peers that resulted to distribute tasks more evenly and specifically required them being involved in activities they felt less frustrating and more rewarding. In contrast, low-performing members reflected that working within modified FTBL module encouraged them to accept different roles as in some sessions other members had similar or less capability performing the required tasks, which boosted their confidence and assisted them to gain positive outcomes (Table 4).

There were minor comments showing few students' reluctance to attend the sessions in order to avoid anxiousness while answering questions in front of their peers (table 3). The author is aware of the Chinese students' leaning habits hence one of the main rationales to design FTBL strategy was to improve their confidence and presentation skills in order to overcome their fears and negative feelings while accomplishing tasks in teams. Students were constantly reminded within the study that enhanced learning occurs not only by studying hard individually but also via communications, collaborations, leadership and presentation skills.

Difficulties in dealing with some less motivated team members was reported by the students in both previous and current FTBL studies but significantly lower in the latter study. As discussed, learners should develop the skills to find ways to encourage their teammates to contribute in different tasks and learn how to assign various roles and responsibilities within the team fairly and efficiently. A further issue during the study was that Chinese students have been taught within their boundaries of comfort that resulted in a degree of dissatisfaction at the beginning of the programme, which was also reflected in modified FTBL online questionnaire. Chinese students usually prefer to work within homogenous groups, i.e. one student remarked "I would prefer to work with the same sex" [31]. The pivotal aim of FTBL study was to simulate students' future work environment and constantly re-shuffle the team arrangement, hence they will not be able to work in such desired environment in the future as companies and businesses are spending less time in periods of routine stability [32]. Therefore, learners should be encouraged to break from their commonplace routines, before entering into their professional life.

Moreover, responses reflected that certain students would prefer not to sit in the front row of the lecture theatre (Table 3). However, requesting participants to sit in different parts of the classroom was one of the aims of this study as normally students who are willing to engage directly with the lecture and feel involved with the teaching activities are seen seated in central locations at the front of the lecture theatre and those with lower engagement and/or motivation usually sit at the corners and back of the lecture theatre [33]. Previous studies suggested that learners who sat in a central/front location of the classroom achieved the highest grades in examinations both if they independently chose to sit centrally and if they were randomly allocated a central seat [33-34]. Therefore, implying the ecology of the classroom has a greater impact on attainment than the students' personality. Constant randomisation of the group structure gives each student the chance not only to work with different partners each time but also to sit in different part of the classroom. This may encourage passive students to change their leaning habits and enhance their participation and engagement within the class which positively result in higher academic performance.

5. Conclusions

FTBL with sustained and random team reallocation was discussed in this paper to improve students learning and experience and to develop the crucial skills they need in both within their education and their future career with the hope to raise the awareness of the implementation of team-work learning approaches, at a greater extend.

Despite students' initial misgivings, they rated modified FTBL as a superior method of learning they have experienced within their education and interestingly learners demanded more FTBL practices within their future degree course (Table 5). Therefore, it is planned to provide more of team-work opportunities within CQC courses.

Further investigation will mainly focus on greater utilisation of FTBL strategy within CQC curriculum, such as the implementation of FTBL in practical aspects of the modules, FTBL approach with team allocation chosen by the students in order to identify the barriers we may face during the application of this method. It is also worth to identify what parts of each module within CQC curriculum require individual assessment and what parts are better to be assessed in teams (developing and promoting team work skills efficiently) as some tasks may not need to be completed in teams and may have counterproductive effects on both individual learners, the team and even on organisation [35]. It is recommended that any new learning strategy should be implemented from the beginning of the course and continued throughout the learners' studies.

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