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Leading Academic Change: Experiences of Academic Staff Implementing Team-Based Learning

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Abstract
Team-based learning (TBL) is a collaborative learning model that shifts classroom time from a teacher-centred to student-centred approach. TBL emphasises accountability to learning, teamwork, immediate feedback, peer feedback, and critical thinking. While many educators value the increased student engagement that results from TBL, the transition from traditional teaching methods to TBL poses challenges. Using a qualitative approach, this study aimed to explore the experiences of 26 academic staff in the United Kingdom who implemented TBL in the higher education setting. Thematic analysis of interview text generated eight themes related to preparing academics to use TBL, challenges related to TBL, and engagement of students with the curriculum. Derived from these themes, a set of recommendations for supporting academic staff who transition to TBL was developed.

Introduction

In constructivist learning theory, the role of the academic teacher shifts from 'transmitter' of knowledge to one who facilitates active learning (Kaufman, 2003). Active learning requires different teacher skill sets than traditional teaching such as lecturing. Teachers today need to design activities to challenge their students, be able to draw out discussion or debates, and facilitate team learning, preferably in 'flipped classroom' format. Success depends on the willingness and ability of teachers to step aside from lecturing and empower students to actively process new knowledge by integrating it with previous knowledge in order to construct new meaning (Moon, 2004). Firmly grounded within constructivist theory is a student-centred instructional strategy: Team Based Learning (TBL)™ (Hrynchak & Batty, 2012). TBL is a specific, structured learning and teaching strategy that includes a number of prescribed components (Parmelee, Michaelsen, Cook, & Hudes, 2012). It takes a flipped approach to learning where students are directed to prepare before classes by the Readiness Assurance Process (RAP), which includes a summative individual readiness assurance test (iRAT) immediately followed by an identical team test (tRAT) to foster discussion, debate, and peer learning. Students and academic staff receive immediate feedback on team performance, allowing a focused class discussion on any troublesome course concepts. The final and longest part of a TBL unit is allocated to application exercises where teams engage with authentic, real-world problems; make collaborative team decisions; and justify their decisions to other teams during discussion and debate facilitated by an academic teacher (Michaelsen, Knight, & Fink, 2002; Strayer, 2011; Sweet & Michaelsen, 2012). Teamwork and accountability to one's peers is reinforced by the use of a peer evaluation component of TBL.

TBL is known to dramatically shift the focus of classroom time from the instructor conveying course concepts (teacher-centred) to the student teams applying course concepts (learner-centred) (Michaelsen et al., 2002). The role of the teacher changes from a content deliverer to that of a learning architect and facilitator of learning (Weimer, 2002). The experiences of teachers making this transition remain underreported in higher education literature.

Changing from a teacher-centred to a learner-centred approach is not without challenges. Andersen, Strumpel, Fensom, & Andrews, (2011) suggest that this can induce anxiety in teachers, create substantial up-front work, and it can be hard to convince learners that the approach is superior to didactic lecturing. A study of 100 academics from 43 US pharmacy schools using TBL suggests that the initial challenges include initial resistance from staff and students, logistical challenges, and increased staff workload during the implementation phase (Allen et al., 2013). Using TBL across a programme of study may initially be daunting for staff and is likely to require significant staff training needs, sufficient management support and resources, and quality assurance processes to ensure consistency of approach (Remington, Hershock, Klein, Niemer, & Bleske, 2015; Sutherland, Bahramifarid, & Jalali, 2013; Tweddell, Nelson, & Clark, 2016).

Although TBL is well established in the US, it is relatively new to the UK. A growing number of UK academics have written descriptive reflections about their experiences implementing TBL

reporting mostly positive results; McMullen et al report positive effects on classroom engagement, interactivity and animated discussion amongst students, while academics found TBL sessions enjoyable and educationally valuable (McMullen, Cartledge, Finch, Levine, & Iversen, 2014). Middleton-Green & Ashelford, (2013) report excellent attendance, enhanced learner engagement, and enthusiastic discussion and debate amongst students. The UK published papers, however, are relatively descriptive in nature and do not explore the in-depth experiences of academic staff transitioning to TBL by using qualitative methodology and empirical data. The few empirical qualitative studies on TBL implementation mostly originate in the US. As TBL continues to expand and develop in the UK across multiple disciplines, it is timely to explore the lived experiences of UK academics who have introduced TBL in their modules or programmes of study.

The educational evidence for active and collaborative learning in students has been proven (van der Vleuten & Driessen, 2014) and analyses of the TBL literature have shown positive educational outcomes (Fatmi, Hartling, Hillier, Campbell, & Oswald, 2013; Haidet, Kubitz, & McCormack, 2014). In addition, there have been a number of studies published that consider the learner reactions to TBL (Currey, Oldland, Considine, Glanville, & Story, 2015; Johnson et al., 2014; Pogge, 2013; Redwanski, 2012; Wright, Frame, & Hartzler, 2014; Zgheib, Simaan, & Sabra, 2011) and the effect on student engagement (Allen et al., 2013; Andersen et al., 2011; Searle et al., 2003). However, there have been fewer studies of the experiences of educators who have used TBL (Kebodeaux, Peters, Stranges, Woodyard, & Vouri, in press). Accordingly, the aim of the study is to assess the experiences of academic staff using TBL in UK universities.

This study uses phenomenological approaches to draw meaning from an in-depth analysis of the initial experiences of UK academics who implemented TBL as the primary instructional learning and teaching strategy within a module or programme of study.

Methods
Ethics Committee (University of Bradford) and Institutional Review Board (Regis University) approval was obtained prior to identification of study participants. Academic staff in the United Kingdom who were known to have implemented TBL in at least one module were identified and invited to participate in this study. Twenty-six academic staff from five universities who met these criteria agreed to participate in this study. The participants represent a diverse background within higher education: agriculture, business, engineering, environmental science, healthcare (medicine, midwifery, nursing, pharmacy), and psychology. Each participant was provided with a study information guide that explained the purpose of the study and gave informed consent prior to participation. Each participant was subsequently interviewed in person for approximately 30 minutes. The interview format was semi-structured using the interview guide provided in table 1. Each interview was digitally recorded and afterwards transcribed by the primary researcher. The secondary researcher checked several transcripts for accuracy by comparing the transcripts to the original recording.

Table 1. Interview Guide

1. How prepared do you feel you were for teaching using TBL?
2. From your experiences so far, what are the positive aspects of TBL?
3. From your experiences so far, what are the challenging aspects of TBL?
4. Do you have any additional comments to make?

Each interview transcript was inductively analysed line-by-line and coded by the primary researcher using computer-assisted qualitative data management software (NVivo, QSR International). The coding methods primarily used were open (initial) and simultaneous coding for the first coding cycle and axial coding for the second coding cycle (Saldana, 2016), resulting in several categories and subcategories of coded text from which themes were identified by the primary researcher and validated by the secondary researcher.

Results
The investigators identified eight themes from the lived experiences of academic staff relating to their initial implementation of TBL. Table 2 summarises these themes by the categories into which the interview text codes were stratified.

Table 2. Code Categorization and Themes

Category	Theme
Preparing academic staff to use TBL	(1) Importance of experiential learning (2) TBL has a steep learning curve that is easy to underestimate (3) A variety of resources are helpful for preparing academic staff
Challenges related to TBL	(4) Additional resources are needed (5) Team application exercises are a distinct challenge (6) Quality assurance policies may impede TBL

	(7) Programme-wide TBL has distinct challenges
Engagement of students with the curriculum	(8) TBL enhances student engagement

Importance of Experiential Learning
The participants indicated that experiential learning is important to help academic staff implement TBL. Many participants commented favourably about their experience with workshop preparatory activities (e.g., a workshop on creating a TBL module), but stated that it was not until they experienced TBL in a classroom of students that they felt prepared for TBL.

> *I thought the preparation was well-organized. There were quite a lot of training sessions. Nevertheless, I am a slow learner and I found I really didn't get my head around it until we actually started doing it.* (Participant 1)

> *Well, [name removed] our module leader, she's very, very prepared and very organised, so we'd had quite a lot of emails and meetings, but I didn't really feel that prepared until I actually started doing it.* (Participant 19)

Some participants felt prior teaching experience that involved facilitating classroom discussions helped them be prepared for TBL. In addition, several participants noted that active observation in a TBL classroom (e.g., joining a team of students for a class session as an observer) provided a valuable preparatory experience and helped them to understand the student experience with TBL, which subsequently informed how they created TBL materials and implemented TBL in their classrooms.

The literature supports the importance of experiential learning with TBL. McMullen et al., (2014) described how they implemented TBL as an instructional strategy for postdoctoral education of medical residents. During this process, a number of experienced educators needed to prepare to use TBL. One conclusion drawn from this study was to "get faculty who are new to TBL to sit in on a session; the technique is best learned experientially".

TBL has a steep learning curve that is easy to underestimate
The participants found it easy to underestimate the learning necessary to successfully implement TBL. Several commented that after completing readings about TBL it was easy to *feel* prepared to use TBL, but in reality they underestimated the nuances that accompany the process.

I kind of do genuinely mean that it is very easy to say you are doing TBL and, you know, read a couple of papers and miss the nuance, and I think TBL is a lot about the nuance, so you need to be a little bit embedded in that. (Participant 22)

The use of technology to facilitate TBL delivery may complicate matters further. Participants felt as if they understood the big picture of TBL, but were sometimes lost in the details when the time came to implement TBL

So it is a very different set of techniques which to a lot of extent just take practice. I remember being very, very nervous in the first set of classes, both due to the technology and the different format, but also trying to feel like I was working the room well enough to get the discussions going so that I was able to facilitate their learning as good as it could be. So that was tough. (Participant 11)

So for the first couple of weeks here, I learned what a RAP is and I learned all the abbreviations, which I think is, again, another language, isn't it? (Participant 8)

Other participants commented that it felt difficult to remember the details about each step of the TBL process when they used TBL for the first few times. In general, they referred to these issues in the context that it is easy to feel that one understands TBL after learning about the general principles of TBL, leading to an underestimation of the tasks and time required to successfully implement TBL. This was mostly due to the prescribed stepwise process of TBL that involves using new tools and classroom management skills.

You really have to see it and do it to understand it better, and then there's one thing being involved on the periphery and seeing it, and then facilitating yourself is a different level again. So, once I had personally gone through with it having the faculty development for that [TBL facilitation] was something that we had underestimated. (Participant 26)

The ease by which the big picture of TBL is understood may cause some to underestimate the work related to the details. In other words, it sounds easy until one tries to do it. An additional piece of advice from the aforementioned study is "do not underestimate how much time and effort it takes to convert lecture-based teaching into TBL" (McMullen et al., 2014).

A variety of resources are helpful for preparing staff to use TBL
The participants commented positively on a variety of resources that helped them feel prepared to use TBL. Examples include TBL workshops, peer-review of materials, observing TBL sessions facilitated by experienced TBL practitioners, asking a peer to observe a TBL session and provide feedback, communities of practice across multiple disciplines to support staff who use TBL, and online resources.

The other thing that probably would have helped in retrospect is having some buddies to try things out on each other, you know to try questions, and application exercises, because you are in them you can't step out and see them for the quality they are or aren't. (Participant 4)

I think there is a lot of value in if you had a few people who were going to work on TBL together within a faculty policy that they might spend a little bit of a time all together looking at all of the modules, helping one another, coming up with creative ideas, then stepping back into the modules, working with detail, then perhaps running it for a round and then coming back again and reviewing, and I think getting a community of TBL practitioners together, knowing roughly what each other is doing and seeing where the good ideas work. (Participant 24)

And I was lucky that Larry [a TBL expert] *happened to be over in London at the time he was, because the time just fitted in with my preparation work. And I made a lot of changes, actually, following the TBL conference and then the workshop with Larry.* (Participant 18)

A qualitative study that examined the reaction of academic staff in medicine to TBL implementation found that academic staff new to TBL felt one TBL workshop was insufficient preparation (Sutherland et al., 2013). Remington et al., (2015) recommended a "multi-pronged approach" for academic staff preparation including workshops covering a variety of TBL topics and a system for peer-review of TBL materials. Development of communities of TBL practitioners to support one another also has literature support. Johnson et al., (2014) reported on a longitudinal analysis of TBL in a pharmacotherapeutics course and commented positively on "teaching circles" of academic staff that were formed to share ideas, successes, and challenges related to the experience of academic staff with TBL. Tweddell et al., (2016) found that the use of "brown bag" discussion sessions was valuable for academic staff preparation when implementing TBL as the primary pedagogy across three years of a new pharmacy curriculum.

Additional resources are needed
When asked about challenges associated with TBL most participants mentioned the time required to develop and deliver TBL modules. In their experience, the time required to prepare TBL materials was higher than traditional lectures. Several stated that converting traditional teaching materials to the TBL format is the main reason why TBL takes more time initially; once these materials have been converted, workload decreases.

It is very, very demanding on staff time to prepare it [TBL materials]. *Very demanding.* (Participant 17)

To change that [material from a lecture-based course] into TBL study packs and then create iRATs, tRATs, application exercises was hard work. But that is not quite a one-off, but mostly a one-off. I say "not quite" because of what I do with first-years in law and of course it can

change year on year, so it's got to be updated. But a lot of it obviously carries forward. So this year I have seen the benefits of that work I did last year. (Participant 13)

The literature suggests that demand for workload resources is particularly high when converting a course to TBL (Johnson et al., 2014; Ratta, 2015). Following implementation of TBL into a course for the first time, some reports state that the time commitment continues to be greater with TBL as compared with traditional teaching methods (Moore-Davis, Schorn, Collins, Phillippi, & Holley, 2015), while other reports state that the time commitment is no greater than creating a lecture-based course for the first time (Corbridge, Corbridge, Tiffen, & Carlucci, 2013).

Another challenge encountered by our participants was that many large university classrooms were designed for lecture-based learning and feature fixed seating in tiered rows (e.g., an amphitheatre-style classroom). However, the ideal classroom for TBL is one which allows student teams to work comfortably together in a large classroom of many student teams (Parmelee et al., 2012). Due to the facilitative nature of the academic's role in TBL, adequate room for them to circulate among student teams during class is desirable. Some staff stated that adequate and even ideal rooms for TBL were located on their campus, but the timetabling process for reserving these rooms created barriers to procuring them for TBL classes.

I think for me, as well, it is quite awkward circulating because I can only walk up one aisle, I can only listen to the ones that are nearest the aisle and then I am walking down and up the other one, and I can't change my route unless I suddenly jumped over tables, so if there are teams that have completely gone off track, I won't know until ten minutes later when I have wandered back. (Participant 4)

When they do the iRAT they sit exam style and then they've got to go from rigid exam style to getting into their little groups, and it is chaos, people all over the place. And often it is the case that if you want to get to a group over here, you can't physically get to them without crawling over the tables and things like that. (Participant 12)

Classroom infrastructure is a TBL challenge that has been documented in the literature (Remington et al., 2015). While it is possible for TBL to work in a traditional amphitheatre-style classroom, the setting of small team tables for students and adequate room for academic staff to circulate among teams is likely to produce a better overall experience for both students and teachers.

Team application exercises are a distinct challenge
Identifying an idea for a team application exercise that is relevant to the material and then developing it into an effective team exercise takes a substantial amount of time. Achieving an appropriate difficulty level in a team application exercise was a challenge that surprised some participants. Several participants used the word "creativity" to describe what academic staff needed to have when developing application exercises and noted that this need may be

mentally tiring. In addition, creating application exercises that do not exceed the allotted class time was challenging, in part because student teams work at different paces.

I think it is really challenging to write good application exercises...And getting the level right for the application exercises has been hard and I suspect that we've still got quite a lot of application exercises that we are using that actually the students could google for the answers, which means we've got it wrong. It is a significant amount of work to write a good application exercise, it is much easier to write something that actually the students could look up. (Participant 7)

You've got to get the questions [application exercises] right. If you get them wrong, they will be too easy and then there is no discrimination at all because they all just agree on an answer, particularly for clinical cases and higher up the year where there is not necessarily a right answer, they are quite difficult to write... it is quite difficult to get a balance of questions that are actually challenging but gets them there. (Participant 5)

Facilitating classroom dialogue during the application exercise phase of TBL presented another distinctive challenge. Several participants noted that their formal training did not include this type of classroom management and it was challenging to learn how to effectively facilitate a dialogue between teams that brought out key learning points. Training on effective questioning techniques (e.g., open-ended questions) was cited as a deficiency that created challenges for staff. Ensuring all key learning points were covered during each application exercise was also a challenge, particularly when staff were simultaneously focused on classroom management and facilitating team discussions. Some participants felt initially nervous and uncomfortable with facilitating application exercises, partly because they were less able to predict how the class session would unfold as compared with lecture-based learning. The TBL classroom atmosphere helped students be at ease with asking questions, which occasionally led to questions to which staff did not know the answer. Several participants mentioned the challenge of becoming comfortable with telling students "I don't know" when this occurred.

Instead of giving information all of the time, you are getting them to elicit the information, so you need a set of questioning skills that are far more developed, using open questions, not using leading questions, that sort of element. You also need to learn how to work the room, and when a pointed discussion comes up you need to then know how to work the room to get an opposing opinion to come from another table. You need to be able to take a step back and say "I don't know the answer, I will go away and find out for you" and sometimes that is hard for an individual, as the senior lecturer in the room, to actually admit to, that you don't know a particular point of law, which tends to be what I teach. (Participant 11)

The "4S rule" of TBL prescribe four criteria for application exercises to meet (Parmelee et al., 2012). Crafting team applications that meet these four criteria is challenging. For example, meeting the "specific choice" criteria for an application exercise means creating multiple choices for teams to debate, all of which should be at least somewhat plausible in order to

create a problem-solving challenge fit for a team. This requires more work than some other answer formats, such as an open-ended answer.

Facilitating team applications in the TBL classroom is also a distinct challenge, as it requires additional facilitation skills beyond managing a discussion among students. For example, it is important to ensure key learning points are discussed, readily heard, and understood by all students in the classroom. Teams may become passionate when defending their answer choice and it is incumbent upon the academic facilitator to turn this passion into a learning moment while ensuring all students understand the most appropriate answer(s) at the end of the discussion. The art of TBL classroom facilitation is beyond the scope of this paper and is covered in other sources (Gullo, Ha, & Cook, 2015; Lane, 2008).

Quality assurance policies may impede TBL
Several participants referred to university quality assurance policies that interfered with the TBL methodology. The assessment of RAP and application exercises arguably lies somewhere in between a classroom learning activity and a summative assessment (Earl & Katz, 2006). When an institution interprets these TBL activities as summative assessments, then academic staff may be required to adhere to rigid policies, including lengthy announcements made prior to administration of the assessment. While this is well-intentioned for high-stakes summative exams (e.g., an end of term exam), several participants experienced that these quality assurance practices became an impediment to effective facilitation of the TBL process.

> *The university has said that if an application exercise is assessed it has got to have the rules around breach and this, that, and the other. There is sometimes where I feel I'm not facilitating a session; I'm invigilating an exam.* (Participant 3)

> *For me the big challenges have been around processing of assessment results and how that links or doesn't link as well as we want it to into the standard university systems for processing assessments. Because it [TBL] is so different from what everybody else does everywhere else in the university, we come up against a lot of problems that we've had to iron out and, in some cases, problems that have felt like brick walls.* (Participant 9)

Another example is a degree programme in which it has been predetermined which assessment activities will be used to calculate a student's grade. For example, the policy of one participant's programme was that only standardised online examinations, objective structure clinical examinations (OSCE), and portfolio work would count as summative assessments. Accordingly, all TBL activities by policy were not counted for a grade. Quality assurance policies that prevent TBL activities from contributing towards a module mark may remove the ability of academic staff to incentivise students to engage in the TBL process. Most TBL practitioners grade the RAT as an incentive for students to prepare for class, and some TBL practitioners grade application exercises as a further incentive for student engagement.

Programme-wide TBL has distinct challenges

The majority of study participants were from degree programmes in which TBL was implemented longitudinally throughout the programme (i.e., programme-wide). Their experiences indicated that programme-wide TBL gives rise to a distinct set of challenges as compared with a setting in which TBL is used in isolated modules. One issue is whether TBL ought to be implemented all at once throughout a programme or implemented a few modules at a time. Some participants felt in hindsight that their experience would have been improved if TBL was initially implemented in only a few modules within their programme, with a plan to convert more modules over time.

> *I almost feel that if I was recommending it to another institution I would say don't change your whole programme, you know change a few modules of your programme to TBL and leave some in other styles, and then if you end up changing the whole thing to TBL it will be in response to student demand and everybody is happy.* (Participant 7)

Another issue is whether or not students become burned out on TBL when they experience nearly all of their coursework as TBL within a degree programme.

> *I do worry though that some students might get a bit tired with the continuous cycles* [of TBL units]. *Once I feel is ok, but when you've had, I don't know how many cycles they've had in a semester, but you get the feeling that towards the end they are flagging a bit.* (Participant 1)

Several participants pointed out that a diverse population of students will have a diverse set of learning methods by which they learn best. Therefore, choosing TBL as the only classroom-based instructional strategy may be a disservice to some students. These participants recommended using TBL strategically, where it fits best with regard to desired student outcomes, and to use other active and collaborative learning models within the programme's curriculum.

> *I mean, hindsight is lovely, but I personally wouldn't have a curriculum-wide TBL programme, regardless of the literature saying TBL drives attainment and progression and appears to be as good if not better than some other teaching methodologies. I think a one-size fits all for all student types is not necessarily pedagogically a good thing to do, and I would like us to be a little bit more savvy in our teaching approach and really focus on where we think TBL is going to derive the best benefit and look at using other teaching methodologies alongside TBL.* (Participant 14)

TBL enhances the engagement of students with learning
The most common outcome relating to students was an increase in student engagement with course material, their peers, and academic staff. Our participants noted that, in comparison with a teacher-centred pedagogy, TBL students come to class prepared to work with the course material because they have studied it ahead of time, are more vocal in class, and a greater proportion of students become engaged in classroom learning. Several staff commented that they are more interactive with students in a TBL setting and get to know the students better.

They [students in a TBL class] *are a lot more engaged than in standard lectures and indeed probably more engaged than they were in our small group tutorials.* (Participant 7)

In the classroom students seem very motivated and there is a buzz in the classroom. So you walk into the classroom and there is a real buzz in there that the students are getting down to tasks. Some students you need to prompt them to put their phones away or whatever, but generally the students are really positive and they have had a good experience their first year. (Participant 15)

Several participants noted that the increased vocality of students in a TBL class may cause academic staff to feel uncomfortable because it is more difficult to predict which questions will be asked as compared with lecture-based learning. With time, however, academics learned to expect questions that they cannot answer and deal with them accordingly.

I think they are on average more confident, they are more proactive in directing their questions and what they want to learn. They question things more than they used to do. (Participant 9)

Overall, staff overwhelmingly appreciated the increased engagement of students in the classroom. In a few cases, participants noted increased engagement may give rise to unprofessional student behaviours that need to be managed by staff. These behaviours may arise simply because students feel more liberated to speak up in the classroom setting.

From the perspective of how do these students compare to my old students at [university name omitted], *I think they are more ballsy, a lot more confrontational, and I think that is good as long as they are taught how to be confrontational.* (Participant 8)

Some participants experienced resistance to TBL from students who were not immediately engaged by it. These participants also noted that with time TBL "sold itself" to students and won them over. Several participants recommended being intentional about explaining and demonstrating the benefits of TBL to students when introducing it for the first time.

I think there is a piece that we didn't get right here, which is around the need to explain it [TBL] *to the students. I think we did a good job of telling them what we were doing and how it would work. I am not convinced we did the PR job for how this was so much better than the conventional university education that would have otherwise received, I am not sure we got that quite right.* (Participant 7)

I am finding it is more complicated for students when they start off, so there is a learning curve and people are overwhelmed with what is a RAT, what is an appeal, what's this, the language becomes quite overwhelming, and that is a more upfront clarification and so forth. (Participant 25)

These experiences of academic staff regarding TBL and student engagement are similar to those reported in the literature. TBL is an instructional model that intentionally engages students with one another and with the course materials in order to solve complex problems (Hrynchak & Batty, 2012). Following the implementation of TBL into a nurse practitioner curriculum, Corbridge et al., (2013) reported that academic staff found it rewarding to observe student engagement with one another and with the course material. When implementing TBL in a midwifery program, Moore-Davis et al., (2015) found that academic staff, following initial resistance by students, experienced positive results in student pre-class preparation and in-class discussions. The positive effect of TBL on student engagement as experienced by our participants is also confirmed by multiple studies that report on the experience of students with TBL (Currey, Eustace, Oldland, Glanville, & Story, 2015; Hazel, Heberle, McEwen, & Adams, 2013; Nelson et al., 2013).

Discussion

TBL is a new pedagogy in UK higher education and this study was a valuable opportunity to explore the experiences of TBL pioneers. Overall, our study participants found the implementation of TBL to be a multifactorial challenge that was ultimately rewarding with regard to having a positive impact on student engagement with curricular material. In the spirit of learning from our participants' experiences, several recommendations for supporting academic staff during the TBL implementation process were drawn from the experiences of our participants and are presented in table 3.

Table 3. Recommendations

• Consult with experienced TBL practitioners to determine a reasonable timeline for TBL implementation and as a general rule plan for about twice as much preparation time as compared with traditional teaching for the implementation phase of TBL. • Provide academic staff with a variety of training and preparation activities, including opportunities for experiential learning. • Provide academic staff with additional workload resources (i.e., more time to prepare, staff support) during the implementation phase of TBL. • Create classroom space that lends itself to TBL success. This may take a substantial time to implement and should to be one of the first things considered when converting a class to TBL. • Provide academic staff with opportunities to observe TBL classes in action, create communities of practice with other academic staff who use TBL, and offer peer review services to developing academic staff as effective TBL classroom facilitators. • Set time limits, develop open-ended questioning techniques, solicit peer feedback, and take notes about the class session during or shortly after class has ended to improve the facilitation of TBL application exercises.

> - Consider how assessment of TBL (summative assessment of RAP in particular) fits with institutional assessment policies and work with quality managers to ensure smooth implementation of TBL relative to assessment policies.
> - Carefully consider if implementation of TBL initially in a few modules or in most or all modules at once is the best fit for your programme.

There are several possible limitations of this study. While the investigators believe that data saturation was achieved, logistics, time, and participant willingness prevented the investigators from interviewing all academic staff who use TBL in the UK. Both investigators are TBL practitioners and may not have achieved bracketing of their experiences from those of the participants in all instances.

The relatively recent introduction of TBL in the UK provides a wealth of opportunity for future education research. For example, it would be valuable to explore the experiences of UK TBL practitioners after a longer period of time (e.g., after 5 or more years of using TBL). This study provides qualitative data on the impact of TBL on academic staff workload, and studies that quantify this impact would be valuable for senior managers responsible for supporting academic staff who use TBL. Finally, it would be of interest and value to explore the experiences of the students during implementation of TBL and the longitudinal impact of TBL on their learning and development.

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