16. Blended think-pair-share with SpeakUp as inclusive and engaging pedagogical activity

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OVERVIEW OF THE ACTIVITY

Name of the Activity

Blended think-pair-share with SpeakUp

Field/Discipline(s)

Gender studies, information systems, sociology, technology-enhanced learning

Short Description

The instructor raises specific open questions related to the content of the lecture. The students first *think* individually about the questions raised, then they *pair* their insight in groups of two or three and then *share* their thoughts by posting them on the SpeakUp classroom interaction app, which acts as a classroom chatroom. On the app all students can discuss each other's anonymous posts and vote on them. The instructor then starts the in-class discussion based on the student input. The goal of the activity is to engage students with the learning material and make them an active part of the learning process. As such, the activity has the potential for creating a supportive classroom environment, challenging old habits of unilateral teaching, and helping students to develop critical literacy.

Total Time Needed

It is possible to organize this activity within the range of 15–45 minutes.

Size and Composition of the Class

The activity can be most effectively implemented in medium-size classrooms (20–150 students) with students from various age groups (15–60 years old), disciplinary fields, and diverse backgrounds.

Learning and Transformative-emancipatory Objectives

The activity enables the students to:

• Develop collaborative skills
• Engage in cooperative learning
• Critically analyze given topics and challenge previous assumptions.

The activity helps the instructor to:

• Gain awareness of students' understanding of the course subject
• Transform unilateral teaching into dynamic classroom discussions.

List of Resources Required

• Digital device (smart phone or computer)
• Classroom interaction system that allows (1) anonymous messages to be posted, and (2) voting on them to take place (e.g. SpeakUp)
• Virtual, hybrid, or in-person classroom.

Key Definitions

Blended learning: an approach to learning and teaching that integrates online learning experience with physical classroom activities, thanks, for instance, to a classroom interaction system.

Think-pair-share (TPS): a collaborative learning and teaching strategy used to enable students to elaborate ideas by discussing them in a group setting. During the activity, the instructor first raises an open question; second, students think about a topic on their own; third they discuss it in pairs, and finally they share their thoughts orally in a class discussion.

Blended think-pair-share (BTPS): a version of TPS that includes a classroom interaction system as a communication channel in an additional online sharing phase that occurs before the class discussion.

1.   INTRODUCTION

This contribution goes back to a common observation of our students' class-room behavior: most of them are used to unilateral teaching where the instructor lectures the course material while they themselves are passively listening. Knowing that classroom participation where students can reflect on their own and analyse the subjects being taught has the potential to foster critical thinking, it seems crucial to find learning activities to challenge classic ways of teaching, engage students during class and break up old habits of one-way teaching.

To address this challenge, we present and critically discuss the implementation of an innovative learning activity, dubbed the blended think-pair-share (BTPS), which makes use of a digital classroom interaction system called SpeakUp, which precisely aims to achieve more inclusive classroom participation and foster active learning for students while avoiding a high implementation barrier for instructors. Used in this sense, it helps the instructor to establish a more engaging and inclusive classroom environment and work towards a shift in the traditional order where knowledge is still often unilaterally constructed. The activity was used and validated across wide contexts ranging from large university auditoriums to small community support centers in a refugee camp to high school classrooms.

2.   THEORETICAL BACKGROUND

Even if the traditional lecture-only format is losing some of its predominance and mixed teaching methods, such as group discussions, one-minute papers, or quizzes that directly engage the students, are gaining importance (Allred & Swenson, 2006), most of our students are still used to unilateral teaching where the instructor lectures the course material while students are quietly listening. By implementing the BTPS activity in our classrooms we want to challenge such old habits and break up this traditional order in higher education. Inspired by critical pedagogy, we are convinced that encouraging active inquiry in the classroom leads to a learning environment that helps students to develop critical literacy that enables them to challenge previous assumptions (Freire, 1970). By inviting students to critically think about a topic, our objective is to co-construct knowledge through classroom engagement between the students, and between the group of students and the instructor. The benefit of class participation has indeed been commonly recognized: research has shown that engaging students in activities during class, such as asking questions and contributing to discussions, can support learning processes and therefore enhance academic achievements (Rocca, 2010; Michael, 2006). By engaging in coop-

erative learning, the students actively participate in the educational process (Cohen, 1991) which motivates them to progress. The more they play an active part, the less basic memorization and simple repetition they do and therefore reflect on their own, elaborate their ideas, interpret, and analyze the subjects being taught (Smith, 1996). This is why there is potential that students would become better critical thinkers through classroom participation (Crone, 1997) that allows time and space to discuss topics and challenge previous assumptions in the field. However, as underlined by Mundelsee and Jurkowski (2021), in traditional class discussions, there is usually little time for reflection before the instructor calls on the first student to open the discussion. This empowers mostly high-performing and extrovert students and further disadvantages lower performing or shy students. This highlights the importance of interaction and participation. In this sense, the digital turn following the Covid-19 pandemic leading to remote and hybrid teaching methods can pose a great challenge to classroom participation and to student learning achievements. It is therefore even more important to create a supportive environment during class through participatory opportunities and propose innovative learning scenarios (Bonfils, 2021; Unger & Meiran, 2020), be it for in-class or hybrid teaching. Digital technologies and (asynchronous) online learning and teaching indeed have the potential to democratize education and widen its access (Alevizou, 2015). Readily available curricular units that can be used anytime by (previously) 'atypical' and disadvantaged students (women and other people with caring responsibilities, students from different socio-demographic backgrounds, non-native students, people with dis/abilities, full-time working students, etc.) can be a pathway for a more inclusive education (Reich & Ruipérez-Valiente, 2019). A classroom interaction system like SpeakUp that can be used in class or in hybrid teaching can further foster inclusive education where every student contribution is valued.

3.   IMPLEMENTATION OF THE PEDAGOGICAL ACTIVITY

Before detailing the lesson plan of the pedagogical activity, we present the characteristics of the digital tool used to support the implementation.

The SpeakUp Classroom Interaction System

SpeakUp (https://speakup.info/) is a classroom interaction system designed and financed by a group of Swiss higher education institutions (University of Neuchâtel, University of Lausanne, EPFL, and the University of Geneva). It is a not-for-profit project and has been operated under a free open access policy.

It takes a privacy-by-design approach, as no login or registration is required to use the service (neither from students, nor from instructors).

SpeakUp provides two main features: (1) it allows students to anonymously post and rate messages on a shared message board. It is like a classroom WhatsApp group but where messages are anonymous and can be upvoted or downvoted. (2) It allows students to answer multiple choice questions, similarly to clickers or other classroom interaction systems.

In more detail, a room can be created by any user from the home screen (Figure 16.1, left image). To create a room, a user indicates a name and specifies if the room is (1) temporary, that is, if it is automatically deleted after 24 hours or not, (2) anonymous, that is, if it can be accessed without a nickname, (3) moderated, that is, whether messages must be validated by the admin before they are posted. Once a room is created a five-digit number room key is associated with it and the room creator becomes the admin. Inside a room (Figure 16.1, right image), any user can post a message and they can vote messages up or down using the thumb up/thumb down buttons. The score of each message appears on the screen (the number of thumb ups minus the number of thumb downs). Messages are displayed according to their publication time but can also be sorted by score. Users can also answer multiple choice questions created by the admin. The admin can decide to show the results of the multiple choice vote to all users at any time.

The Blended Think-pair-share Learning Activity

The BTPS learning activity is an extension of the well-known think-pair-share (TPS) learning activity (Michael, 2006). The design of these activities starts with the following assumption: during lectures, one strategy for getting students engaged in thinking critically about a particular topic (e.g., data privacy, digital nudging) is to engage in a class discussion by asking students questions orally (e.g., what kinds of behaviors do you engage in online with respect to your data? what is a good example of a digital nudge?). Unfortunately, as mentioned above, participation rate can be low, particularly in the case of university students at the Bachelor level with large classrooms, which makes it intimidating for students to speak (Anderson et al., 2003; Stowell et al., 2010).

The TPS activity aims to improve such activities by democratizing them along four steps. In the first step, the instructor raises a question related to the content of the lecture. Then the students are instructed to "think" and reflect for a couple of minutes on their own. In the third step, they are encouraged to discuss their opinions in "pairs". This third step is an example of a peer-instruction learning activity, which contributes to improved learning (Vickrey et al., 2015; Mundelsee & Jurkowski, 2021). In such an activity students learn both by explaining their point of view to others and by receiving
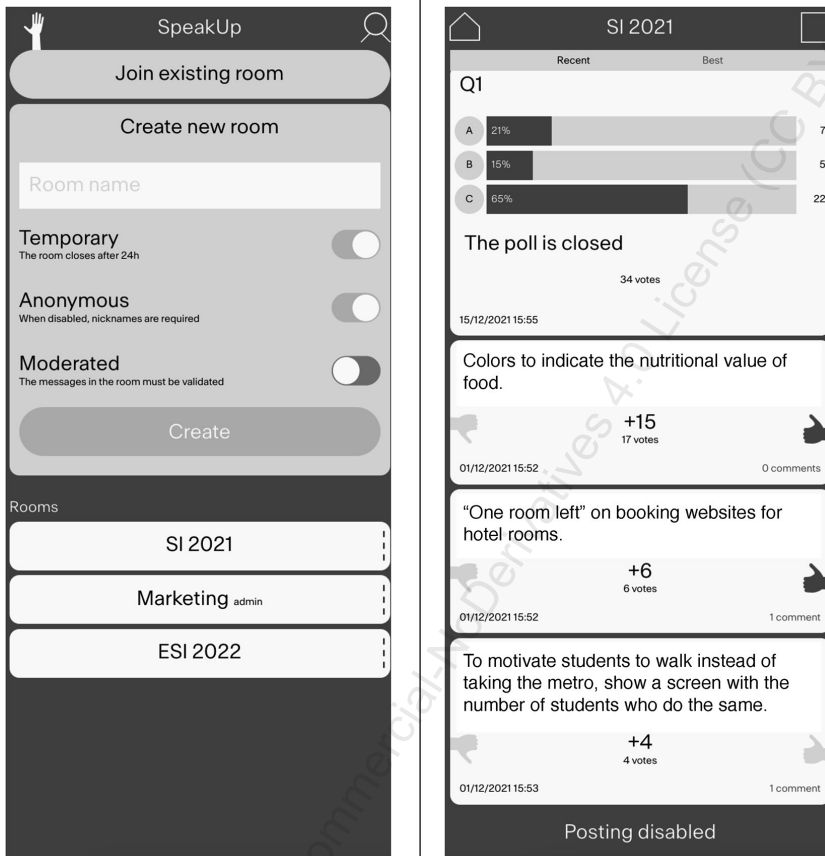
Note: left: room creation screen, right: inside a room.

Figure 16.1 Screenshot of the SpeakUp app

an explanation from other peers. Explanations coming from peers do not suffer from the so-called curse of knowledge that can make it difficult for experts to explain concepts to novices. In Step 4, students are invited to speak in front of the class to "share" the outcome of the pairwise discussion. With this method, speaking is facilitated by the pairing phase where students could receive feedback from others. However, even when this activity works perfectly, students only receive feedback from immediate neighbors and instructors only have access to a few inputs since the process of sharing opinions orally takes time.

The blended version of TPS precisely addresses this shortcoming by including a learning technology such as SpeakUp that allows (1) anonymous messages to be posted, and (2) voting on them to take place. Steps 1, 2 and 3 remain the same as in the original TPS activity. However, Step 4 is modified into three sub steps: in Step 4.1, pairs of students are asked to share their responses anonymously in a virtual chat room on SpeakUp. This step allows the instructor and the other students to have access to much more student input than in the original TPS activity. Then, in Step 4.2, students are asked to read and react to other students' contributions by voting on the app using thumbs up and down if they agree. This step allows students to receive feedback from many more peers than in the original activity. With these two steps it is possible to gather contributions from a large part of the class very quickly. In addition, as these contributions can be weighed by the opinions of other students, it is possible for the instructor to get a clear overview of the opinions, understanding or misconceptions on a particular topic. Step 5, the last step of the activity, is a classroom discussion initiated by the instructor who will use certain messages from SpeakUp as a starting point either to provide clarifications for misconceptions, or to elicit further comments.

To set up the activity, the instructor creates a room on SpeakUp and gives its number to students so they can join it (Step 0). Note that in addition to being positive for learning and inclusion, this activity is lightweight: it can be quite easily integrated in an existing lesson plan which is essential for its implementation.

Table 16.1 synthesizes the lesson plan sketched above.

4.   ADAPTATION

The activity can be most effectively implemented in medium to large size in-person classrooms (20–150 students) with students from various age groups (15–60 years old) and it can be used for any disciplinary field. Below, we detail how it can be adapted to other contexts such as online classes, smaller or larger classrooms. Furthermore, we present pointers on how to handle settings for heterogeneous or vulnerable audiences.

In-person Class

See Table 16.1 for the lesson plan.

Online Class

To conduct this learning activity in distance or hybrid learning environments, Step 3, where students discuss in pairs, must be adapted. For instance, students

Table 16.1   Overview of the BTPS learning activity

Steps	Details	Time needed	Aim of each step
Step 0: Setup	The instructor creates a room on SpeakUp and shares the room number with students and asks them to join the room	1–3 mins	Make sure students have access to the digital classroom interaction system
Step 1: Kick off	The instructor presents the activity to the students and asks an open question	2–3 mins	Make sure students understand how the activity will unfold and kick it off with the central question to be discussed
Step 2: Think	The students think and reflect on their own	1–3 mins	This step allows the students to critically analyze given topics and challenge previous assumptions
Step 3: Pair	The students discuss their opinions in "pairs" or groups of 3–4 people	2–10 mins	This step allows the students to engage in cooperative learning with their neighbor(s)
Step 4.1: Blended share – post	The students share their responses by posting messages anonymously on SpeakUp's share room classroom me	2–4 mins	This step allows the students to contribute to the discussion without speaking
Step 4.2: Blended share – vote	They react to other students' contributions by voting on the app using thumbs up and down if they agree or not. The students read and react to other students' contributions	2–5 mins	With this step it is possible to easily gather contributions from a large part of the class. As the contributions can be weighed by the opinions of other students, the instructor gains awareness of the students' understanding or misconceptions
Step 5 Share	The instructor starts the in-class discussion informed by the messages posted on Speakup	5–30 mins	This step provides clarifications and feedback on the subjects taught and transforms unilateral teaching into dynamic classroom discussions

who are participating remotely can be paired with other remote students in separate "breakout sessions" (i.e., one on one chat sessions). This adjustment can be time consuming, and, in some cases, Step 3 can be skipped. Steps 2, 4, and 5 do not need to be adjusted as they work well across different modalities.

Small Class and Large Class

The SpeakUp app can be used for relatively small (≈10 students) to relatively large classes (≈300 students) alike. With larger groups of students, the amount of SpeakUp messages to handle can become too big to be processed quickly during class. To overcome this issue, either the time is increased (e.g., Step

5 can be done in the following lecture or after a break), or the number of messages is purposely decreased by grouping students in larger groups during Step 2.

Primarily Homogeneous vs. Diverse Classrooms

Through its digital component, BTPS can accommodate students with dis/abilities and facilitate participation for students having for example hearing difficulties or speech disorders. Furthermore, thanks to peer collaboration, this teaching strategy is also known to make it easier for shy students to participate in-class (Mundelsee & Jurkowski, 2021). Anonymous posting implies that users are empowered to participate but they might also feel entitled to misuse the digital communication app and post off-topic messages (Holzer et al., 2014; Rodríguez-Triana et al., 2020). In order to promote constructive inputs and ensure a safe digital space for any type of students (e.g., vulnerable populations, younger and LGBTQI+ students, students with immigrant background), instructors can discuss the adequate "online etiquette" to adopt (Govaerts et al., 2018). Further, if needed, moderated rooms can be created in SpeakUp (by activating the corresponding toggle upon room creation) so that all messages must be approved by the instructor before they are shown in the shared chat room.

Disciplinary Adaptation

BTPS can be used for any disciplinary field and does not need any specific adaptation.

5. CONCLUSION

In this chapter, we have presented a transformative learning activity called the blended think-pair-share, which uses an anonymous classroom interaction system (e.g., SpeakUp). We discussed how the addition of a digital channel can leverage that activity to offer an engaging and more inclusive classroom setting by accommodating "atypical" or disadvantaged students. Having in mind the importance of fostering critical thinking and breaking old habits of one-way teaching, we think that BTPS can help in working towards a shift in the traditional order where knowledge is still often unilaterally constructed. In times where remote and hybrid teaching methods gain more and more importance, the BTPS activity has also the potential for bridging the gap between in-class and remote teaching by maintaining the possibility of smooth interaction in both settings alike.

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