Teaching Innovation Projects

Volume 9 | Issue 1 | 2020

Implementing Team-Based Learning to Strengthen Communication Skills among Undergraduate Kinesiology Students

Patrick Siedlecki

The University of Western Ontario, psiedlec@uwo.ca

Follow this and additional works at: <https://ojs.lib.uwo.ca/index.php/tips>

Recommended Citation:

Siedlecki, P. (2020). Implementing team-based learning to strengthen communication skills among undergraduate kinesiology students. *Teaching Innovation Projects*, 9(1), 1-11.

<https://doi.org/10.5206/tips.v9i1.10316>

ABSTRACT

Kinesiology is the study of human movement and grounded in learning about physiological and psychological mechanisms of physical activity, exercise, and sport. Despite the educational focus promoting an active lifestyle, teaching strategies often ignore the hands-on and interactive components of the field, in favour of a traditional passive teaching style (Bulger, Housner, & Lee, 2008). This teaching approach can be problematic as most undergraduate Kinesiology students will either pursue an academic career path, or enter a health care field (e.g., kinesiologist, medical doctor, physical therapist, etc.) Whichever path a student chooses, it will require strong communication skills, whether it be sharing research ideas or working with a patient. To improve these skills, instructors can use an interactive classroom. A recent study evaluating communication competence in undergraduate nursing students found overall improvements in communication efficacy and communication ability when implementing team-based learning (TBL; Cho & Kweon, 2017). Therefore, a larger focus in Kinesiology should be on promoting effective communication skills so that students are more prepared when they graduate. By incorporating TBL into Kinesiology courses, students can become more interactive in the classroom and build upon fundamental skills that are paramount in academic and health care settings (Meeuswen, King, & Pederson, 2005).

TBL is the process of dividing large classrooms into smaller groups to enhance student participation through peer discussions (Michaelson, Parmelee, McMahon, & Levine, 2007). Adding a TBL component can be a valuable strategy for an instructor. However, it can be challenging to implement, as it requires fundamental knowledge of TBL and a demanding time commitment when starting. This workshop will help current and future instructors in Kinesiology learn to promote student engagement and build effective professional communication skills using TBL.

KEYWORDS

team-based learning; communication development; kinesiology

LEARNING OUTCOMES

By the end of this workshop, participants will be able to:

- Define the core elements of team-based learning, and discuss the benefits/challenges of its implementation into the Kinesiology classroom.
- Create and design a team-based learning activity that will increase student participation in the classroom.

ANNOTATED BIBLIOGRAPHY

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93, 223-231.

Prince posits the importance of transitioning classrooms from traditional (passive) lectures to active learning environments. The author identifies active learning as a teaching strategy that

encourages professors to include meaningful activities in the classroom that stimulate student engagement. These activities should enable students to reflect on the course material and get the most out of their classes.

This article presents a meta-analysis of the benefits and challenges regarding the use of different active learning strategies. The overall conclusion supports the use of an active learning approach to teaching in higher education. The author suggests that although active learning is not the solution for every problem encountered in university, professors should focus on including activities that support student collaboration and cooperation to improve learning outcomes, keep students more involved in learning, and enhance interpersonal skills. Active learning strategies should align with learning outcomes or risk the perception of being pointless or random.

This workshop will support the inclusion of collaborative and cooperative group activities in order to encourage deeper learning. Although TBL is one type of active learning, not all active learning activities that depend on student groups are TBL. The workshop facilitator should share the criteria that differentiate TBL from other active learning techniques discussed in the following articles.

Thompson, B. M., Schneider, V. F., Haidet, P., Perkowski, L. C., & Richards, B. F. (2007). Factors influencing implementation of team-based learning in health sciences education. *Academic Medicine*, 82(10), S53-S56.

This study examined the challenges and barriers associated with implementing a TBL strategy in American health science courses. All respondents surveyed attended a TBL workshop or presentation and shared their experiences with the new approach. Respondents indicated that the most common factors to successfully implementing TBL included buying into the program, having experienced professors conduct TBL, having the resources to host TBL, finding time to implement the changes, and finding the right situation to use TBL. The number one factor mentioned was buy-in. To run TBL successfully, everyone involved in the process (i.e., professors, students, and administration) must understand the benefits that TBL can have on student engagement and learning. One method to overcome this issue is to ensure that all members are educated on TBL.

Expertise in TBL is necessary if an individual instructor wants to adopt this approach. Conducting TBL can be challenging, especially when first starting. Instructors must practice their skills and develop procedures in order for lectures and courses to run efficiently. Two additional barriers include resources and time. The lack of available resources can impede the success of the program. In large lectures, space can create issues and finding clever ways to divide the class into smaller groups within tight areas is important. Additionally, developing activities can front load professor preparation time (deterring interest in this approach). However, survey respondents expressed the positive value of using the technique once implemented.

The last barrier to consider when designing a TBL protocol is to ensure that TBL components are meaningful additions to course content. Instructors should assess the potential impact of TBL before implementing it and conduct an ongoing evaluation of its usefulness to ensure that the strategy is working. The authors found that the size of the course and the specific content of the course should be considered when deciding whether to use TBL.

In relation to this workshop, participants will discuss the barriers associated with TBL and identify alternative solutions. Even though there are many benefits of using TBL in the classroom, this article proves that it can be challenging to set up a TBL plan.

Haidet, P., Levine, R. E., Parmelee, D. X., Crow, S., Kennedy, F., Kelly, A., Perkowski, L., Michaelsen, L., & Richards, B. F. (2012). Perspective: Guidelines for reporting team-based learning activities in the medical and health sciences education literature. *Academic Medicine*, 87, 292-299.

This paper discusses the core design elements necessary to successfully run a TBL exercise in a health sciences lecture: 1) team formation; 2) readiness assurance; 3) immediate feedback; 4) sequencing of in-class problem solving; 5) the four S's (i.e., significant problem, same problem, specific choice, and simultaneous reporting); 6) incentive structure; and 7) peer review. The authors highlight the importance of creating groups or teams that are equal in knowledge, as uneven teams can lead to reduced student participation. The suggested group size was approximately 5-8 members. Either the instructor or students can choose groups, as long as student performance remains uncompromised.

Instructors can promote in-class readiness by asking students to solve problems individually prior to the lecture. Group discussions during the lecture hold individual students accountable to their group members and motivate them to come to class prepared. During teamwork, students act as teachers by sharing their ideas and facilitating discussions. This setting allows other students to provide immediate feedback and enhances team communication. Intra-team discussions should precede inter-team discussions. Having a specific order ensures that students will have multiple opportunities to discuss and apply knowledge to solving real-world problems. The authors believe that teams develop an identity and cohesiveness when they come to common understandings.

The four S's require that problems given to the groups be significant (e.g., problems that could occur in the real world). In addition, all groups should have a chance to grapple with the same problems to keep everyone interested and to provide time for as many people to share their own approaches. Each group should devise a solution to develop their group identity. Simultaneous reporting allows all groups to be aware of conflicting ideas/solutions, which can then promote further discussion among groups.

Professors should grade both individual and group performances. Feedback on individual work prevents the spread of incorrect information among group members. Individual grading also motivates pre-class preparation and team grading can promote group collaboration. The group

setting also allows peers to provide both positive and constructive feedback. The authors describe constructive feedback as keeping students accountable for their own performances and promoting readiness and participation.

Participants will follow the core elements outlined above when developing TBL strategies of their own during the “Designing a TBL Activity” component of the workshop.

ADDITIONAL REFERENCES

Bulger, S. M., Housner, L. D., & Lee, A. M. (2008). Curriculum Alignment. *Journal of Physical Education, Recreation & Dance*, 79(7), 44-49.

Cho, Y. H., & Kweon, Y.-R. (2017). Effects of Team-Based Learning on Communication Competence for Undergraduate Nursing Students. *Journal of Korean Academy of Psychiatric and Mental Health Nursing*, 26(1), 101-110.

Meeuswen, H. J., King, G. A., & Pederson, R. (2005). Effects of cooperative learning strategy on undergraduate kinesiology students’ learning styles. *Perceptual and Motor Skills*, 101(2), 525-530.

Michaelsen, L. K., Parmelee, D. X., McMahon, K. K., & Levine, R. E. (2007). *Team-Based Learning for Health Professions Education: A Guide to Using Small Groups*. In: Stylus Publishing LLC, Sterling, USA

WORKSHOP CONTENT AND ORGANIZATION

DURATION (min)	SUBJECT	ACTIVITY	PURPOSE
5	Workshop Introduction	Introduce the purpose of the workshop and go through the learning outcomes. Emphasize the definition of TBL.	Provide the participants with a sense of what to expect during the workshop.
10	Ice Breaker Activity	<p>Have participants self-select into small groups. Encourage them to meet each other and answer the following questions:</p> <ul style="list-style-type: none"> • Name? • Teaching position? Role? • Why sign up for the workshop? <p>As participants are meeting each other, distribute the ‘Toolbox’ handout (see Appendix A). Once the greetings are</p>	<p>Allow participants to get comfortable with others in the class and build group cohesion.</p> <p>The handout is a space to write down any information that participants find interesting for future reference.</p>

		finished, explain the purpose of the handout.	
15	Previous Experience Group Discussion	<p>In the same groups as above, ask participants to discuss previous experiences with active learning and/or TBL in their undergraduate Kinesiology programs. Participants may consider the following questions:</p> <ul style="list-style-type: none"> • Did the activity work? Why or why not? • Which activity was your favourite? Why? <p>If time allows, groups can be encouraged to share their experiences/findings with other groups.</p>	To get participants thinking about situations where they have experienced TBL and to think critically about how TBL can be successful or unsuccessful.
30	TBL Information Session	<p>Present a summary of the TBL literature. Identify the benefits to and barriers associated with using TBL. Share information on the seven core elements required to run a TBL activity effectively (see the Annotated Bibliography).</p> <p>Discuss examples of TBL activities that Kinesiology instructors could use in a large lecture setting. Compile participant responses in a visible way (e.g., whiteboard). Add additional activities to the list if more examples are necessary.</p>	<p>Inform participants about the challenges and benefits of using TBL.</p> <p>Give participants a chance to expand their TBL Toolbox by hearing contributions from the group.</p>
15	TBL Activity	<p>Have participants work in small groups to discuss what they believe to be appropriate and inappropriate topics for incorporating TBL into Kinesiology classrooms. Encourage them to use their own backgrounds and course expertise to reflect on the question.</p> <p>Have groups share their ideas back with the larger group.</p>	To begin thinking about how to implement TBL in their own work and gather a sense of how other instructors might incorporate TBL.
20	Designing a TBL Activity	Hand out the TBL Activity worksheet (see Appendix B) to guide participants in designing their own TBL activity.	To practice designing a TBL plan for their own teaching purposes.

		Have participants work independently to design a short TBL activity. Ask them to consider adding in a short activity for about every 20-25 minutes of lesson plan (i.e., 2-3 activities per 60 minutes of lecture). Participants could base the plan on a class or lab that they have taught in the past but are now revising to include a TBL element.	Participants will think critically about different ways to teach their material and try to solve any barriers that may occur.
15	Group Sharing Activity	<p>Divide the group into small groups.</p> <p>Have participants take turns explaining their TBL activity and respond to any questions from their group members. For example, why did they choose that particular TBL activity?</p>	<p>To provide immediate feedback on participant lesson plans.</p> <p>To enhance intra-team communication and expand each participant's TBL Toolbox by hearing ideas from their peers.</p>
10	Wrap-up	<p>Ask participants to reflect and provide feedback on what workshop material/activities they found most valuable. Feel free to add on any points that participants miss to create a complete list.</p> <p>Provide the informational handout, which will recap the workshop and act as a takeaway for future reference (See Appendix C).</p>	<p>To recap the workshop and it give the participants a sense of what the take home messages are.</p> <p>To have participants reflect on what they learned from the workshop.</p>
Total Time: 120 minutes			

PRESENTATION STRATEGIES

This workshop will focus on teaching participants the basic elements required to design a successful TBL lesson plan for the Kinesiology classroom. It informs participants about common barriers to using TBL activities in the classroom and promotes group learning to overcome these barriers. The workshop is a great opportunity for participants to experience TBL first hand, as it incorporates a number of team-based activities.

Together, participants will construct a list of TBL activities that instructors from Kinesiology and other Health Science disciplines could implement in their own teaching. The main objective is to

give participants experience applying what they learn from participating in the workshop to designing their own TBL plan. At the end of the workshop, participants will be able to start incorporating TBL activities into their own courses, and reflect critically on how to overcome any barriers that may interfere with the process. While the facilitator will guide the workshop, participants will drive the majority of the discussion.

If the facilitator prepares PowerPoint slides to support the workshop, they should include (but are not limited to) definitions for active learning (Prince, 2004), TBL (Michaelsen et al., 2007), the challenges and barriers associated with TBL (Thompson et al., 2007), and the core design elements of TBL (Haidet et al., 2012). During the activities where participants are working in groups, the facilitator should move among the groups to ensure participants stay on task and prepare for the next activity.

Ideal Pre-Workshop Preparation

- Reserve a space for the workshop that can hold approximately 20 participants (ideally in small groups of 3-5). The room should include a projector and screen, computer, whiteboard with erasable markers.
- Copy handouts and prepare PowerPoint slides that correspond with the activities identified in the Content and Organization Table.
- Create a list from your own personal experiences for the following activities: TBL examples drawn from previous experiences, and TBL strategies for large classrooms. Share these examples if the participants have trouble generating their own experiences.

APPENDIX A: TOOLBOX

Use this sheet to write down any ideas brought up by others that you believe may be useful to you in the future. This sheet is only for your interest.

Team-based learning activities:

Strategies to overcome barriers:

Other comments:

APPENDIX B: Team-Based Learning Activity Worksheet

Use the space provided to design a Team-Based Learning activity that would fit in with your current or future course material. Do not be afraid to be creative!

What is the topic of your lecture on? (i.e., What is your favourite topic to cover in class?)

How many students will attend the lecture?

How many groups will you create and who will choose them?

What kind of TBL activity/activities will you include? (Hint: Look at your Toolbox – See Appendix A)

How will you test students for their readiness assurance? (i.e., Did students have homework? Did they do it?)

Be prepared to share and explain why you chose these answers.

APPENDIX C: Informational Handout

Core Elements of Designing a Successful Team-Based Learning Session (Haidet et al., 2012)

Factors to consider when designing a team-based learning lesson plan:

- Team formation (who picks the groups and what will the group sizes be?)
- Readiness assurance (how will you assess the student's readiness?)
- Immediate feedback (provide individual and group feedback)
- Sequencing of in-class problem solving (individual → intragroup → intergroup reflections)
- Four S's (significant problems, same problem, specific choice, simultaneous reporting)
- Incentive structure (grade individual and group performances)
- Peer review (allow time for other students to give each other feedback)

Haidet, P., Levine, R. E., Parmelee, D. X., Crow, S., Kennedy, F., Kelly, A., Perkowski, L., Michaelsen, L., & Richards, B. F. (2012). Perspective: Guidelines for reporting team-based learning activities in the medical and health sciences education literature. *Academic Medicine*, 87, 292-299.

Barriers of Implementing a Team-Based Learning Activity into a Lecture (Thompson et al., 2007)

Common barriers reported when trying to implement team-based learning activities:

- Buy-in (professor, students, and administration understand the benefits)
- Expertise (knowledge of running a TBL activity)
- Resources (space availability, time management, etc.)
- Time (preparation time)
- Course characteristics (course length, course content, size, etc.)

Thompson, B. M., Schneider, V. F., Haidet, P., Perkowski, L. C., & Richards, B. F. (2007). Factors influencing implementation of team-based learning in health sciences education. *Academic Medicine*, 82(10), S53-S56.