Map The System 2020

Report

Enhancing **Collaboration** in Group-based Learning in **Schools** and **Universities** in Ontario

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Executive Summary

Learning to work in teams is a significant learning outcome in most, if not all, of post-secondary programmes in Ontario. However, the efficacy of teaching and learning teamwork within these programmes may not be satisfactory for the requirement of post-secondary institutions. In an anonymous online survey with 89 students at post-secondary institutions in Ontario, 64% of the participants were not satisfied with their teamwork experience. Although schools and universities in Ontario recognize the importance of teamwork, students learn very little about teamwork skills during school time.

The failing of teaching and learning teamwork in schools and universities causes tremendous negative consequences to society. When a student fails to develop collaboration skills in their school time, they may face several difficulties while working in a corporation or starting a business. According to market research conducted by CB insight, not the right team accounted for 23% of startup failure. According to a report by Gallup in 2013 60% of people in the workplace were not satisfied with their team.

We recognize the importance of teaching and learning collaboration in post-secondary institutions as well as the gap between expectations of school and the reality of students. In order to understand the teaching of collaboration in group-based learning in institutions around the world, we believed it was best to narrow our research to our province of origin, Ontario. Ontario has 22 public universities, 24 public colleges, 17 privately funded religious universities, and over 500 private career colleges and some of which rank very high in QS World University Rankings 2020 such as University of Toronto (29), McMaster University (140), Waterloo University (173). Understanding the teaching of collaboration at post-secondary institutions in GTA could give us a general view of post-secondary institutions in other places around the world.

We conducted in-depth interviews with 16 students and 17 instructors at post-secondary institutions in the GTA and reviewed substantial peer-reviewed publications, reports, books and articles and mapped current solutions. We identified three gaps and levers of change as following:
Gap 1: Team-based courseworks do not include the objective of promoting team-based learning skills.
The lever of change: Instructors should consider team-based learning skills as the main goal of teamwork assignments.
Gap 2: Students tend to cooperate rather than collaborate in a group assignment
The lever of change: University should have workshops to teach collaboration skill and instructor should promote the importance of collaboration in group-based learning
Gap 3: The goal of group-based learning can be hindered if the students team are not supported and equipped with proper tools
The lever of change: Equip students with a comprehensive tool that helps them form a team, manage team and assess their teammate.
Gap 4: Attempting to discern what will improve students team efficacy adds to the amount of work and commitment that instructors may not have available to them.
The lever of change: Equip instructors with a comprehensive tool that helps them effectively support students' team with minimum time and effort.

Literature Review

Group-based learning is important for education because it helps students reach a deeper understanding of course material as well as foster collaboration in the class (Hall & Weaver, 2001). However, the goal of group-based learning can be hindered if the students' teams are not supported and equipped with proper tools (Mazumder, 2018).

Team formation is a crucial step in group-based learning. A significant number of research papers state the importance of effective team design for group-based learning (Lightner & Willi, 2007). Forming a good team requires careful selection of group members that ensure diversity and balance of skills and personality. In order to make the right selection, an instructor or a student should be aware of the background, skill, experience or personality of the other students. There are some online tools that allow for the collection of data to assist in forming a team. This includes the Comprehensive Assessment for Team-Member Effectiveness (CATME) and other types of built-in tools within learning management systems (Mahmood, 2016). However, the efficiency of those tools remains a topic of debate for researchers (Jahanbakhsh, 2017).

After forming a team, students need to be prepared to effectively work in those teams and it is the instructor's duty to encourage the teams to function effectively. Instructors may not know about team management skills so it might be a challenge for them to teach students how to work with each other (Larreta-Azelain, 2014). Besides, attempting to infer what will improve team efficacy adds to the amount of work and commitment that instructors may not have available to them, either due to other workload requirements or limited compensation. There are many online project management tools such as Slack, Asana, Trello that are available but few students know how to use them (Minchew, 2015) and even those tools are not able to facilitate communication and build trust amongst team members.

Many studies point out the limitation of team-formation tools like CATME, MBTI, Trello, or Asana for student group assignments (Jahanbakhsh, 2017). The limitation with these tools is that they do not help determine fundamental attributes of a successful team such as open communication, positive feedback, commitment to team success, accountability or team cohesion. Although they form a team, what students mostly rely on is co-operation and coordination, as tasks of a project can tend to be distributed among the team members and each individual works independently. Team formation tools do not help facilitate collaboration, which is the process where the final product is the result of all the members in the group working together (Paulus, 2005). Effective teamwork comes from collaboration, not only cooperation (Ekblaw, 2016).

There appears to be a need for a more integrated online one-stop-shop for student teamwork. A platform that helps students create a team, manage their team, and assess their teammates. Instead of using multiple tools for team formation, team management, and team assessment, one platform can help students prevent five team dysfunction arising from inattention to results, avoiding accountability, lack of commitment, fear of conflict and absence of trust. (Lencioni, P. 2012)

Problem Landscape

We conducted interviews with 50 students and 20 instructors at post-secondary institutions in GTA, many of whom teach at Ryerson, McMaster, University of Toronto about group assignment. According to our research, 60% of students face challenges when working in groups with their peers. Surprisingly, 80% of instructors believe that students do not have any issue with their group assignment. It means students have much trouble with team dynamic issues, but instructors do not recognize it.

The following problems were reported repeatedly:

1. Students in a class, particularly in a big class or an online class, do not know everyone well enough to know if they can form a team that meets their own course objectives.
2. Most students complain that their teammates do not contribute to the group assignment.
3. Many instructors care about students' performance in group assignments but they don't have enough time to keep track of student team progress.
4. Peer evaluation, generally summative in nature, fails to let instructors know about team dynamics and performance of each group in a formative way.

Solution Landscape

We built a software as a service (SaaS) platform that addresses the aforementioned issues of group-based learning respectively:

1. Students can create their profile on the platform and share it with other students in a course and/or with the instructor. Students and/or the instructor can decide they wish to create their team and invite other students to join.
2. The platform offers a feature that allows a team to assign tasks to each member and keep track of the tasks.
3. The platform summarizes all student team activities to the instructors' dashboard which helps keep track of student team progress with minimum time and effort.
4. The platform provides an online anonymous team assessment that helps students provide more honest feedback about their team performance on an ongoing basis and assists instructors in addressing issues with team dynamics and performance.

Gap and Lever of Change

We identified three gaps and levers of change as following:

Gap 1: Team-based coursework does not include the objective of promoting collaboration skills. The lever of change: Instructors should consider team-based learning skills as the main goal of teamwork assignment.

At the moment, the purpose of team-based coursework is just to complete a common task rather than promoting collaboration skills. We believe that school/ university is the best place to learn collaboration skills as they would have to learn it the hard way if they don't learn it at school. Therefore, team-based learning skills, or collaboration skills, shouldn't be an indirect objective but should be considered as the main goal of teamwork assignment for the next-generation education. Instructors play an important role in this process

Gap 2: Students tend to cooperate rather than collaborate in a group assignment
The lever of change: University should have workshops to teach collaboration skill and instructor should promote the importance of collaboration in group-based learning

In order to finish a group assignment, students tend to divide the tasks to each member and assemble it to make a final product. In another word, students only cooperate to finish a shared task, they do not collaborate to complete it. While the cooperation can get the job done, the collaboration is the bedrock for innovation, creativity, and excellency. Hence, universities should have more workshops to teach students how to collaborate with each other in a group assignment. When assigning an assignment, instructors should also stress the importance of collaboration in a group-based learning activities

Gap 3: The goal of group-based learning can be hindered if the student's team are not supported and equipped with proper tools
The lever of change: Equip students with a comprehensive tool that helps them form a team, manage team and assess their teammate.

Students will have the ability to self-assess their learning capabilities and to participate with other students in optimizing those capabilities and mitigating their learning weaknesses through an enhanced team learning environment provided by the online team management platform.

Gap 4: Attempting to discern what will improve students' team efficacy adds to the amount of work and commitment that instructors may not have available to them.
The lever of change: Equip instructors with a comprehensive tool that helps them effectively support students' team with spending minimum time and effort.

Instructors will have access to an online platform that allows them to create more efficient team learning environments without the additional workload and time required to normally do so. Weaknesses in the team learning process can be identified formatively rather than the traditional summative way and corrections can be made to avoid learning difficulties.

Conclusion

The COVID-19 pandemic has posed tremendous challenges to health and economic systems around the world. However, it is the first time we can see a collaboration effort from all the scale around the world. The virus has taught us a simple lesson: we are all equal and fragile in front of natural disasters and collaboration is the only way to survive and thrive. We can prepare for the future by equipping students with collaboration skills from group-based learning. Those skills will help them tackle the next challenges.