

Guides: Designing and assessing teamwork online

Overview - Benefits and challenges

Online teamwork can be defined as students working together in a small group that carries out collaborative work through electronic media (Chinowsky & Rojas, 2003). It is rewarding with many potential benefits but at the same time, it is also challenging. Other than the common issues such as free-riding and social loafing, the online learning environment also poses other unique challenges. Below we list out some of the benefits and challenges of online teamwork.

Benefits and challenges of online teamwork

Benefits	Challenges
<ul style="list-style-type: none"> • Enhance the quality of learning through collaboration • Develop higher order skills, e.g. critical thinking, reflective skills • Develop generic skills, e.g. teamwork, communication, and project management skills • Have students stay connected with their peers and support one another* • Bring together students from different cultures and backgrounds without geographical boundaries* • Stimulate new assessment formats as the team deliverables, e.g. simulations, digital narratives* • Develop virtual collaborative skills* • Reduce the heavy grading workload of teachers by focusing on better quality assignments • Allow peers and teacher to trace/review the history/process of online collaboration* 	<ul style="list-style-type: none"> • Difficult to evaluate the contributions of individuals in the team • Designing a suitable team task requires careful thought • Some students hold negative perceptions of teamwork • Some students might resist collaborating on the platform on which teachers/tutors could monitor the process* • Lack of proximity* • Unfamiliar approaches to social interactions* • Difficult to focus on the tasks* • Difficult to manage distant/delayed communications and resolve misunderstanding* • Logistics – time zone difference, internet connections* • Technical difficulties*

Notes: (1) The table is compiled based on Koh & Hill (2009), Saghafian & O'Neill (2018), and Assessment Resources@HKU; (2) Items with * are particularly associated with teamwork in an online environment.

Assessment task design

Having meaningful and motivating tasks for student teams is important. In both face-to-face and virtual modes, a good teamwork task needs to have the following characteristics: aligned with the course intended learning outcomes, achievable, encouraging collaboration and contributions from all students, and interesting and relevant to students.

Tips for task design in an online environment

- **Avoid easily divided tasks:** It is better to have collaborative tasks that require each student to contribute and collaborate rather than tasks that can be easily divided into individual

components (Davies, 2009). An example of a collaborative task is asking students to research on a topic, evaluate different perspectives, and develop their own views that integrate the different perspectives.

- **Consider time and workload carefully:** Though team tasks are typically more complex than individual assignments, it is important to carefully consider how much time students really need to complete the task. The calculation should include team establishment, information collection, communication, and decision making, plus the time spent on completing the deliverables (Nelson et al., 2007)
- **Build in milestones or some low-stakes tasks:** A big, high-stakes task at the end is intimidating. Building in milestones or a number of low-stakes tasks (e.g. an outline, an abstract, a storyboard) and providing student teams with feedback on them will greatly help students complete their final tasks successfully (Dijkstra et al., 2016)
- **Make the final deliverables online friendly:** Conventionally, student teams are often asked to make a presentation and submit a group report. In an online environment, creative ways of expression, such as digital narratives, videos, audios, infographics, and concept maps, can be encouraged. Examples of an online friendly deliverable is a Wikipedia page that requires students to collaboratively edit online or a digital exhibition assignment that requires students to design and create a virtual tour showcasing specific artefacts (see Technology-enhanced Learning website, HKU for the two examples: <https://www.cetl.hku.hk/tel/videos/>)

Resources

- Davies, W. M. (2009). Groupwork as a form of assessment: Common problems and recommended solutions. *Higher Education*, 58, 563-584.
- Centre for Teaching Enhancement, Cornell University (2020). *Examples of Collaborative Learning or Group Work Activities*. Retrieved from: <https://teaching.cornell.edu/resource/examples-collaborative-learning-or-group-work-activities>
- Technology-enhanced Learning Website, HKU (2020). *Videos*. Retrieved from: <https://www.cetl.hku.hk/tel/videos/>

Group setting

Free riding, social loafing and, to another extreme end, hijacking are some of the dysfunctional behaviours that are most destructive to student learning in group project, because they discourage contribution from other members (Kapp, 2009). Rather than divorcing members or regrouping students, a better solution is to establish an effective strategy to prepare the students. See some effective tips for early stage of group formation from the literature (also applicable in virtual team).

Tips for group formation (for early stage)

- **Keeping group size small:** A group of 4-5 members is effective. “The late Harvard psychology professor Richard Hackman noted that it takes only 10 conversations for every person on a team of five to touch base with everyone else, but that number rises to 78 for a team of 13.” (Ferrazzi, 2014). Some teachers would also prefer a size of five (odd number), so that the team could make decision by voting.

- Clarifying individual roles and responsibilities:** Parker (2011) developed an effective team model consisting of four team player styles, i.e. Contributor (task-oriented), Collaborator (goal-oriented), Communicator (process-oriented) and Challenger (reflection-oriented). Students could do a pre-survey to understand their current primary team player style, role, responsibilities, strengths or weaknesses. (Parker Team Player Survey available at <http://region21.org/downloads/2015Summer/TeamPlayerSurvey.doc>)
- Setting team goals and contract/policy:** After knowing the nature and individual team player styles, teams need to set goals and policies based on the combination of team members. Team goals should not only focus on accomplishing the team missions, but also address the personal development of each members (Lau & Kwong, 2016). Team contract is crucial to generate “shared cognition” among the members, so that everyone knows the appropriate process to perform (Salas, et al, 2008, p.541). (See a team contract example at http://www.pmtraining.com.tw/member_pmp/Team%20Contract%202.0.pdf)
- Setting ground rules for online discussion:** Netiquette is a new term which combines the words “network” and “etiquette”. It is defined as a set of ground rules and regulation for behaving properly in cyberspace. Student working in virtual team should know the basic netiquette to develop effective collaboration and communication. (See details at <http://www.albion.com/netiquette/index.html>; examples of ground rules are available at <https://blog.lucidmeetings.com/blog/using-ground-rules-improve-engagement-excellent-team-meetings>)
- Doing individual and team readiness assurance tests:** It is a good practice to test if the individual members and teams are ready to collaborate (e.g. sharing knowledge accurately) before performing as a team. Furthermore, these tests will serve as formative assessment and the teams will receive feedback to improve. (See details at <https://learntbl.ca/what-is-tbl/ensuring-student-readiness/>)

Tips for activities

Activities	Working teams in the classroom	Virtual teams
Brainstorming	Whiteboards Flip chart boards	Free systems for brainstorming, team collaboration and project management systems: <ul style="list-style-type: none"> • Miro (https://miro.com/online-whiteboard/) • Slack (https://slack.com) • MindMeister https://www.mindmeister.com/)
Think-pair-share	Post-its	Padlet (https://padlet.com/)
Poster presentation	Flip chart boards	New Google Sites (https://sites.google.com/new) Mahara (https://learning.hku.hk/mahara/)
Group discussion	Face-to-face discussion	Synchronous discussion <ul style="list-style-type: none"> • Breakout rooms on Zoom Asynchronous discussion <ul style="list-style-type: none"> • Discussion board on Moodle
Writing reports	<ul style="list-style-type: none"> • Google Doc (not available in Mainland China) • OneDrive share point 	

For more suggestions of online tools/resources, please refer to the websites of Technology Enhanced Learning (<https://www.cetl.hku.hk/tel/technological-tools/>) or Technology-Enriched Learning Initiative (<https://teli.hku.hk/e-learning-resources/>).

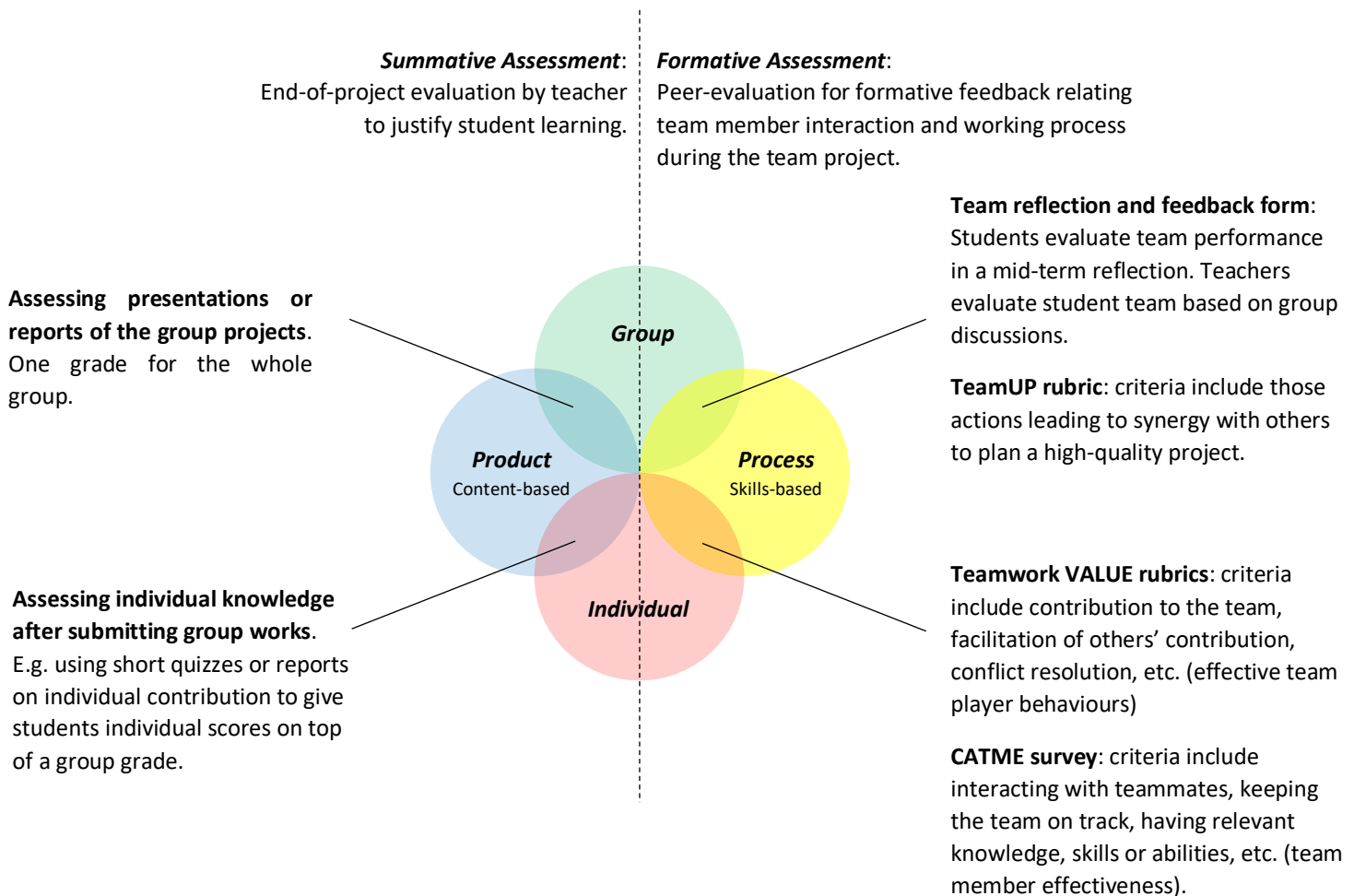
Remarks: Teachers should start with designing the activities/instruction before choosing a platform to facilitate it. Also, students need to be prepared when new platform is introduced, so it is not recommended to implement too many new platforms in a course.

Resources

- Team-based learning <https://learntbl.ca/what-is-tbl/>
- Overview of the Readiness Assurance Process <https://learntbl.ca/what-is-tbl/ensuring-student-readiness/>

Teamwork assessment and rubric designs

To choose appropriate strategies to assess student learning in team (including virtual team), questions of three dimensions should be considered: Assessing team's *products* (content-based, e.g. reports, presentation, etc.), the team *process* (skills-based, e.g. effectiveness of team members, team decision making, etc.) or both? Assessing *individual or group* as a whole? *Formative* or *summative* assessments? The below framework integrating the above three dimensions suggests some examples of assessment tasks/tools.



Based on two recent large-scale multi-disciplinary collaborative learning projects (Ganotice, & Chan , 2019; Lau, Chan, Wong, Kwong & Gibson, 2019), researchers identified that team conversations in online collaborative platforms (such as Moodle and LAMS) help to visualise the working process of *virtual teams* and to make the team decision making and development transparent to teachers and students. However, the interactions through the social media or face-to-face meetings are relatively difficult to observe and assess.

Resources

Team reflection and feedback form - students (Penn State University):

https://sites.psu.edu/schreyer/wp-content/uploads/sites/213/2012/07/6-team_reflection.pdf

Group assessment

<https://ar.cetl.hku.hk/group.htm>

TeamUP rubric:

It is a teaching and assessment tool used to support and evaluate students learning teamwork skills. It is developed for health care education from Teamwork VALUE rubric.

Hastie, C.R. (2018). 'TeamUP': An approach to developing teamwork skills in undergraduate midwifery students, *Midwifery*, 58, 93-95. <https://doi.org/10.1016/j.midw.2017.12.026>

Teamwork VALUE rubrics:

It is one of the 16 rubrics developed in the Valid Assessment of Learning in Undergraduate Education (VALUE) rubric project led by AAC&U (Association of American Colleges & Universities). This rubric assesses the teamwork of an individual student, not the team as a whole. It is designed to measure the quality of a process, rather than the quality of an end-product. <https://www.aacu.org/value/rubrics/teamwork>

Britton, E., Simper, N., Leger, A., & Stephenson, J. (2017). Assessing teamwork in undergraduate education: a measurement tool to evaluate individual teamwork skills. *Assessment & Evaluation in Higher Education*, 42(3), 378-397 <https://doi.org/10.1080/02602938.2015.1116497>

Comprehensive Assessment for Team-Member Effectiveness (CATME):

It is a web-based programme which provides tools for peer evaluation and helps instructor to gather information from students and provide feedback to student teams. <https://info.catme.org/>

Online teamwork rubric - teachers (Carnegie Mellon University)

<https://www.cmu.edu/teaching/assessment/examples/courselevel-bycollege/hss/tools/jeria.pdf>

Other examples of teamwork development and assessment at local universities:

Ganotice, F.A. & Chan L. K. (2019). How can students succeed in computer-supported interprofessional team-based learning? Understanding the underlying psychological pathways using Biggs' 3P model. *Computers in Human Behavior*, 91, 211–219.

Lau, M., Chan, I., Wong, E. Y. W., Kwong, T. & Gibson, D. (2019). Helping students to build multicultural and multidisciplinary competences: A pilot of challenge-based collaborative Learning on a digital gamified platform. *Journal of Education and Culture Studies*, 3(3), 285–295. <https://doi.org/10.22158/jecs.v3n3p285>.

Lau, P., Kwong, T., K, Chong., & Wong, E. (2014). Developing students' teamwork skills in a cooperative learning project, *International Journal for Lesson and Learning Studies*, 3(1), 80–99.

Zou, T.X.P., & Ko, E.I. (2012). Teamwork development across the curriculum for chemical engineering students in Hong Kong: Processes, outcomes and lessons learned. *Education for Chemical Engineers*, 7(3), 105–117.

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- Hastie, C., Fahy, K., & Parratt, J., (2014). The development of a rubric for peer assessment of individual teamwork skills in undergraduate midwifery students. *Women and Birth*, 27(3), 220–226. <https://doi.org/10.1016/j.wombi.2014.06.003>
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