

Peer Learning: Designing Better Learning Environments

Contents

Introduction	2
Design Interventions	3
Designing groups for effectiveness	3
Role of the faculty	3
Assessing peer work.....	5
Types of Peer Learning	6
Peer Interaction	6
Peer Response.....	7
Peer Collaboration	7
Peer Feedback.....	7
Peer Facilitated Instruction.....	8
Peer Learning in an Online Environment	8
Appendix 1: Tools and Software for Facilitating Peer Learning.....	10
Appendix 2: Guidelines for Developing Rubrics	11
Appendix 3: Other Cooperative Learning Activities	12

Note: This document is expanded by default. To view the document in a collapsed mode, you need to right-click on any heading (with a twisty/triangle next to it) and then navigate to Expand/Collapse -> and click on Collapse All Headings. To collapse sections of the document, right-click on the particular headings and navigate to Expand/Collapse -> and click on Collapse Heading.

Introduction

Peer learning refers to a group of learning strategies designed by faculty, where students teach and learn from one another to achieve learning outcomes. It assigns active roles to both the faculty and the students in the learning process. We use the terms 'peer learning', 'cooperative learning', and 'collaborative learning' interchangeably in the article. However, there are differences. Collaborative learning includes all activities where students work together to learn, solve problems, and complete assignments. Peer learning is a type of collaborative learning¹. In peer learning, students learn from each other while in collaborative learning they learn in parallel, alongside one another².

Peer learning is an essential element of learning in a management institution, where a significant dimension of learning is experiential and applied in nature. In a professional course like the MBA, the diversity among students in terms of their life and professional experiences is usually very high. When you interact with the students as the faculty, each of them relates to the classroom lessons from their own context. This provides the peer group with a rich perspective for situating classroom lessons that reinforce learning and lead to realizations and insights that could add value even to you. Further, peer learning allows students to practice collaborative skills while forecasting the rewards and challenges of work relationships to come. It also improves their organizational skills during the course of planning lessons, prioritizing goals, evaluating their own and group's progress, and exchanging feedback.

Dewey³ (1966), Vygotsky⁴ (1980) and Piaget⁵ (1977) argue that the more students collaborate in the learning process, the more powerful is the actual learning. Active participation and collaboration improve retention, assimilation, and practical application of the concepts⁶. Pascarella and Terenzini⁷ (2005) find that active student engagement in learning and teaching (as opposed to faculty centered lectures) and collaborative learning with teachers and peers can improve learning outcomes.

As Professor Eric Mazur, Balkanski Professor of Physics and Applied Physics at Harvard University says, 'Peer learning results in students playing an active role in their learning where they actually understand the concepts rather than memorize lessons or learn the recipe of how to solve a problem. Faculty should play the role of a coach who guides the students from the sidelines rather than be a sage on the stage delivering the lecture. Students do not learn by listening. They learn by doing. Peer learning brings the 'doing' back to the classroom.' He also says that the reason that students are good at teaching one another is that they are 'beginning learners'. Unlike faculty, who have the 'curse of knowledge', where they forget the difficulties that they faced when they first studied the concepts, the students remember these and address the problem areas in their interactions⁸.

As mentioned in the student section, peer learning offers a plethora of benefits including but not limited to enhanced comprehension, improved interpersonal and collaborative skills, improved organizational skills, self-directed learning, improved critical reflection and problem solving skills. However, sometimes students find group work difficult, unrewarding, and frustrating⁹. Often the fault lies in the design of the group, the role the faculty is expected to play, or the assessment methodology.

¹ <https://teaching.cornell.edu/teaching-resources/engaging-students/collaborative-learning>

² <https://www.randstad.co.uk/career-advice/career-guidance/collaborative-learning-versus-peer-to-peer-learning/>

³ Dewey, J. (1916). *Democracy and Education*. New York. Macmillan.

⁴ Vygotsky, L. S. (1980). *Mind in society: The development of higher psychological processes*. Harvard university press.

⁵ Piaget, J. (1977). *The development of thought: Equilibration of cognitive structures*. (Trans A. Rosin). Viking.

⁶ Gilbert, C. G., Hunsaker, S., & Schmidt, B. (2007). Peer instruction: Faculty as architects of peer learning environments. *Perspective*, 7(2), 18. <https://www.byui.edu/a/69365>

⁷ Pascarella, E. T., & Terenzini, P. T. (2005). *How College Affects Students: A Third Decade of Research. Volume 2*. Jossey-Bass, An Imprint of Wiley. 10475 Crosspoint Blvd, Indianapolis, IN 46256.

⁸ <https://www.youtube.com/watch?v=Z9orbXoRofI>

⁹ Boud, D., Cohen, R., & Sampson, J. (2014). *Peer learning in higher education: Learning from and with each other*. Routledge.

The purpose of this article is twofold. First, we mention the design interventions which can improve the experience of all the stakeholders in the peer learning environment. We explore how faculty can design groups to improve effectiveness, optimize their role in peer learning, and use assessment effectively to achieve desired learning outcomes. Second, we discuss types of peer learning, where we list activities which the faculty (or groups) can use to design context-rich environments for peer learning, formalize interaction within groups and help all group members contribute to the discussion.

Design Interventions

Designing groups for effectiveness¹⁰

As faculty, your responsibility of ensuring peer learning goes beyond setting group projects in the course outline. Peer learning is not a default result of a group project as students do not automatically learn from each other. Left to their own devices, students will attempt to get into a 'good group'; one that they think will work well and has the sort of membership with which they feel comfortable. In a culturally diverse classroom, for instance, the locals would try to avoid international students in pursuit of familiarity and comfort. Various ethnic groups would coalesce for reasons of mutual support and ease of communication, completing the 'ghettoization' of the classroom. Over the course of a few semesters, the students would have an accumulation of narrow (at best) or negative (at worst) group learning experiences.

To solve this, you must consciously design groups to set up conditions that will lead to group effectiveness. Do not permit students to self-select. Use a method where students are systematically allocated to peer learning groups. As a result, several groups will automatically have diversity in terms of culture, language, gender diversity, and years and area of work experience. It is also possible that some groups will also have knowledge diversity, providing the students an opportunity to literally teach and learn from one another.

Role of the faculty¹¹

Despite all its purported benefits, peer learning is not without risk. When peer learning is unstructured, poorly designed, or lacks faculty engagement, students are unlikely to benefit from the process of peer learning. It might, in fact, border on irresponsibility and be reduced to a case of 'untrained and uninformed students swapping ignorance'.

Students have great potential when given opportunities to exercise their agency. However, the outcome boils down to the design of the peer learning assignment itself and the role of the faculty. Faculty are the 'architects' of the peer learning experience. They must engineer assignments with a specific learning outcome in mind.

There are four areas in which the faculty can play a key role in designing the peer learning environment:

- **Designing the course**

Peer learning should be consciously designed into the course outline and not simply included occasionally, as an afterthought. Peer learning is more effective if used in the context of conceptual problems or case studies which encourage students to apply and discuss key principles that are being taught. Using peer instructional methods which help students engage with the material and deepen their conceptual learning by weaving in problem-

¹⁰ Boud, D., Cohen, R., & Sampson, J. (2014). *Peer learning in higher education: Learning from and with each other*. Routledge.

¹¹ Gilbert, C. G., Hunsaker, S., & Schmidt, B. (2007). Peer instruction: Faculty as architects of peer learning environments. *Perspective*, 7(2), 18. <https://www.byui.edu/a/69365>

centered applications tend to be the most useful. You can refer to *Appendix 1* for assessing various tools and software available for facilitating peer learning.

- **Structuring the classroom**

You must support and strengthen the learning process to an extent that benefits the students but does not stifle their personal growth. While interacting with one another students may provide open-ended and unstructured feedback which is hard for the recipient to act upon. One way to structure such peer interaction is to provide evaluation parameters and rubrics to the students. Rubrics list grading criteria, characteristics, and performance levels associated with each criterion. Rubrics are useful as they inform the students of what they need to do to get a particular grade or rating. They help a student judge their own work and accept more responsibility for the output¹². *Appendix 2* has guidelines for developing rubrics. You can access sample rubrics for papers, projects, oral presentations, and class participation [here](#). You can also examine rubrics on [AACU](#) or use [RubiStar](#) to create template-based rubrics. The figure below shows a sample rubric for a report.

		Performance Rating			
		Excellent	Good	Satisfactory	Needs improvement
Criteria	Components of the Report	All required elements are present and additional elements that add to the report (such as thoughtful comments, suggestions, etc.)	All required elements are present.	One required element is missing, but there are additional elements adding to the report (such as thoughtful comments, suggestions, etc.)	Several required elements are missing.
	Question/Purpose	Purpose of the team activity or the question to be answered during the activity is clearly identified and stated.	Purpose of the team activity or the question to be answered during the activity is identified, but stated in an unclear manner.	Purpose of the team activity or the question to be answered during the activity is partially identified, and stated in an unclear manner.	Purpose of the team activity or the question to be answered during the activity is erroneous or irrelevant.
	Spelling, Punctuation, Grammar	One or fewer errors in spelling, punctuation and grammar in the report.	Two to three errors in spelling, punctuation and grammar in the report.	Four errors in spelling, punctuation and grammar in the report.	More than four errors in spelling, punctuation and grammar in the report.

Source: Adapted from <https://www.uen.org/rubric/know.shtml>

- **Creating a culture of participation**

With peer learning, students are called on to do more, in terms of preparation and participation. You must develop an environment where such activities are a normal part of everyday classroom experience. You can mention this approach in the course outline, tie a portion of the grade to participation, use an early session to teach students how to engage and participate in the course, ‘cold call’ (a technique that brings accountability to the class boosting participation) to check preparedness, find ways for everyone to participate by rotating calling patterns and foster an environment where all comments are valued.

- **Monitoring with positive intervention**

While students are engaged in peer learning, you must perform the critical role of monitoring, and intervene or redirect the peer learning process where required. Monitoring may take the form of observing and facilitating group discussions, (online or offline, as the case may be),

¹² <https://www.uen.org/rubric/know.shtml>

redirecting discussion through questions, correcting and explaining if students are forming consensus around a faulty conclusion and requiring reports from group work.

Another issue that you may have to deal with while facilitating peer learning is **managing dysfunction in groups**. This is a huge task. You must resist attempts by the groups to enrol you as an arbitrator, a problem solver or a *de facto* leader. You may use peer evaluation to deal with this problem or penalize the groups that frequently bring dysfunction to you; this sets the expectation that students are expected to work out most issues among themselves.

Assessing peer work¹³

It may be argued that there is little merit to formally assessing peer learning activities. If students perceive an activity to be worthwhile, they will adopt it. After all, students form learning clubs and set up peer study groups without them being a part of the course outline. However, there are benefits to formally including peer learning in a course. That way all students can benefit from collaborative activities from the very start of the course.

Assigning assessment points to peer learning is a way for you to signal that you value peer learning. If an activity is not assessed, students may think of it as being less important. It is also a compensation of sorts for the extra effort which the students may have to expend in undertaking peer learning. Moreover, used appropriately, assessment serves to support and encourage students in attempting meaningful engagement in collaborative activities.

Insensitively designed assessment practices can undermine the goals of peer learning and lead students to reject learning collaboratively. They can lead to unhelpful forms of competition within and between groups which prevent the groups' functioning effectively. For example, when the only the outcome (say a report, presentation or assignment) of peer activity is assessed it may encourage conformity in return for grades. Group members will focus on checking all the boxes (to produce the output) rather than on learning, thereby marginalizing outcomes of the activity. You may have come across instances where students divide the work and present a poorly compiled assignment or a report, barely making an effort to learn other components. Assessment criteria for a peer learning activity need to be suited to the desired learning outcomes of the activity. For example, the assessment for an activity that seeks to promote teamwork will be very different from the one that seeks to promote learning of the subject matter.

Experience shows that use of group assessment (as opposed to individual assessment), peer feedback and self-assessment (informed by peers), assessment of students' contribution towards the process of learning and negotiated assessment¹⁴ agree well with assessing peer work. Group assessment - where students are judged on collective effort, rather than individual performance - is justified on the ground that it rewards collaboration and teamwork, which are the intended learning outcomes of peer learning. Peer feedback and self-assessment can improve your own assessment of the group's work. The only people who are there when the peer learning took place are the group members themselves¹⁵. Thus, it makes sense to include peer assessment in the grading rubric. Assessing learning processes in addition to or in place of output is in line with the ethos of peer learning. Negotiated assessment can make students feel more involved in the learning process. As already mentioned, you can refer to *Appendix 2* to examine guidelines for developing assessment rubrics, and other sources such as [sample rubrics](#), [AACU](#) or [RubiStar](#) for rubric templates.

¹³ Boud, D., Anderson, G., Cohen, R., & Sampson, J. (1997). Developing assessment for peer learning. *Research and Development in Higher Education*, 20, 117-125.

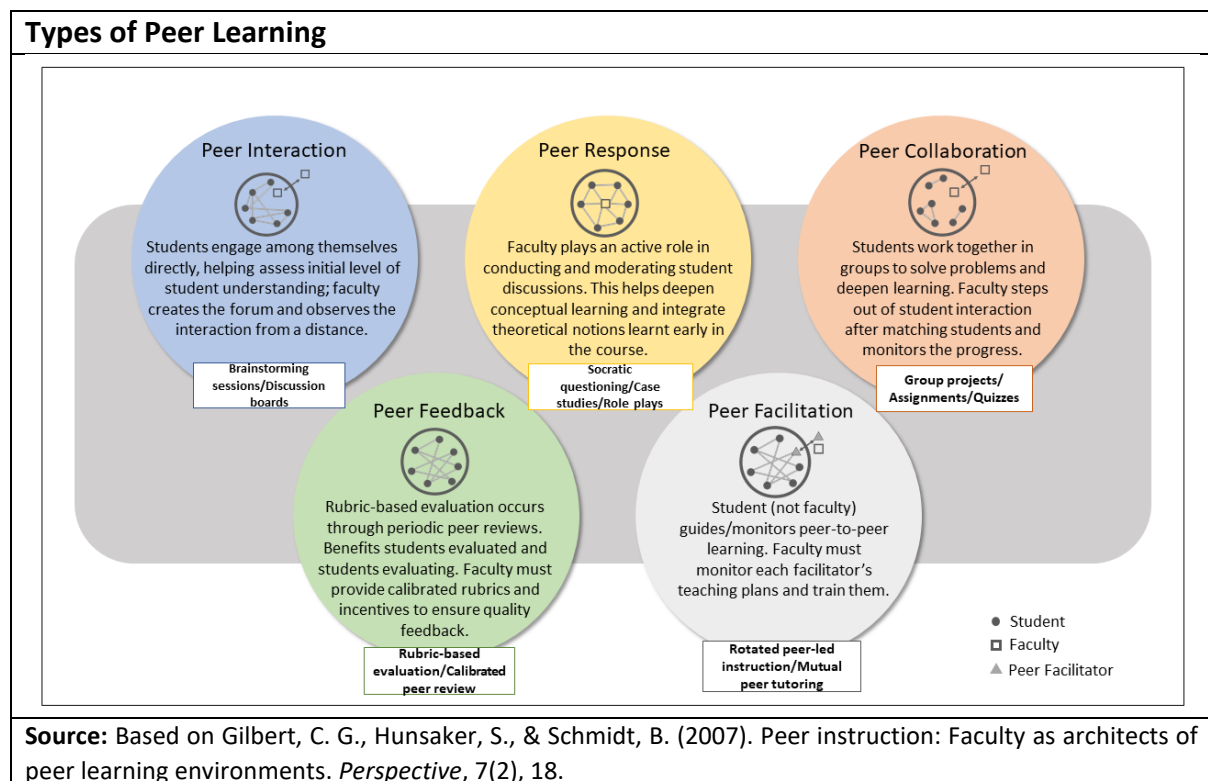
¹⁴ Negotiated assessment involves the parties concerned agreeing on the assessment process in the light of their learning goals, activities and anticipated outcomes, recording the mechanism and criteria of assessment and applying this to their own deliberations.

¹⁵ <https://www.youtube.com/watch?v=3CVNi6PS7Pg>

Finally, there are some issues to which there are no easy answers. While assessment of peer learning activities should reward collaboration and foster group learning, it should not come at the cost of inhibiting individual achievement. Similarly, a balance must be achieved between assessing processes and outcomes. Assessments must take into account that certain important aspects of peer learning – such as interpersonal relationships or personal reflection – cannot be accessed. It is relatively easier to assess the output (the presentation, report, assignment or a write-up). However, learning processes and positive impacts of peer learning are harder to measure.

Types of Peer Learning

One of the reasons that peer learning is so effective is that it assigns an active role to the students. They are no longer silent spectators in class. They are given the opportunity to prepare for the discussion, form their own ideas, and teach each other. You can see active learning in action [here](#). Various activities lend a structure to peer learning and formalize it to a large extent. The figure below summarizes types of peer learning which faculty can use to design peer learning environments for the students.



You have to make a decision as to which peer learning activity to use based on the unique requirements of your students and expected learning outcomes of your course. Some activities may be better suited for introducing new content to the students while some may be apt for deepening understanding of theoretical concepts or applications. We explore these in detail in the following section:

Peer Interaction

- **What:** All learning activities where students interact with each other without the assistance of faculty come under the ambit of peer interaction.
- **When:** These activities help assess student understanding prior to introducing new content. The faculty can establish a baseline of student understanding to work with during

the semester. They are particularly helpful in letting students explore the course material and get to know each other.

- *Role of Faculty:* You will perform the role of the initiator. You will introduce the topic and invite students to participate in the discussion after which you will be the silent observer (either remotely or directly, as the case may be)
- *Examples:* Group discussions, study groups, brainstorming sessions, online discussion boards fall under the ambit of peer interaction.

Peer Response

- *What:* This is a peer learning strategy where you play an active role in conducting the discussion among the students. Faculty may define a scenario, pose questions, and redirect the flow of conversation during the learning activity.
- *When:* Peer response activities help deepen conceptual learning and integrate theoretical notions learnt during the initial part of the course. They also help the faculty gauge general understanding of the concepts by the students. Consider this [video](#), for example, where the faculty introduces a concept, poses a problem, asks students to discuss among themselves, rotates around the class to guide conversations and asks groups to present their findings. This results in deeper engagement with the content and longer retention of knowledge.
- *Role of Faculty:* While using these activities, you must play an active role in directing and moderating the conversation among students. You must elevate and strengthen the discussion by posing loaded questions and making suggestions at opportune times.
- *Examples:* Socratic questioning¹⁶, paired teaching, case studies, concept tests, role plays, student panels, class demonstrations.

Peer Collaboration

- *What:* These activities involve joint problem solving or concept application by a group of students towards an end (a report, assignment, or response). The key is that students work collectively, in groups. The debate which occurs in pursuit of an answer which convinces all group members fosters learning and development of reasoning skills.
- *When:* These activities are suitable when enough time has passed after the introduction of a concept. They help to deepen learning, teach practical applications, and inject energy in the class.
- *Role of Faculty:* The faculty does not participate in the discussion. You must, however, compose the groups to ensure diversity and have a system to monitor progress of the group as well as individual students.
- *Examples:* Group projects, assignments, and quizzes (where students can collaborate and compete in teams, like a televised gameshow).

Peer Feedback

- *What:* These activities include periodic peer reviews to evaluate the students. Usually, the faculty provide rubrics which the students use to provide feedback to each other. The student who is being evaluated benefits from the feedback while the evaluator benefits from self-learning.

¹⁶ Socratic questioning is a technique which helps in deepening understanding of a concept. Questions may be directed towards clarifying concepts, probing assumptions, rationale, reasons and evidence, questioning viewpoints and perspectives, probing implications and consequences and finally, questioning the question itself. Read more [here](#).

- *When:* These activities are apt for occasions that call for real-time feedback but are constrained by faculty availability.
- *Role of Faculty:* You must ensure that students are aptly matched, provide criteria or rubrics for evaluation, and design incentives for students to give quality feedback (for instance, blind feedback would encourage openness).
- *Examples:* Calibrated peer review (enabled by web-based software), criteria or rubric-based evaluation

Peer Facilitated Instruction

- *What:* In these activities, students (and not the faculty) facilitate any of the above peer learning activities. The role of facilitation may fall to one single student earmarked by the faculty or may rotate among the students.
- *When:* These activities work to extend faculty reach as selected students facilitate and monitor peer learning. Student facilitators benefit by way of deepened learning, development of peer instructional skills, and a sense of responsibility for learning of their peers. The other students benefit from having better camaraderie and accessibility to a facilitator.
- *Role of Faculty:* You must select and train students in tutoring techniques (such as pause, prompt and praise), review their teaching plan, and observe their teaching to ensure quality. You must structure the content into clearly defined, meaningful tasks that encourage participation and reinforce learning. You must also provide regular feedback to the student facilitators¹⁷.
- *Examples:* Dedicated peer facilitators, student-led lesson development, mutual peer tutoring, rotated peer-led instruction.

There are other cooperative learning activities such as reflective learning assignments, jigsaw or experts, quiz and find, showdown, think-pair-share, circles, 30 second speech, gallery walk, round robin, three step interview, round table and group roles. These activities are generally used in a corporate context or in executive education classes but lend themselves well to an academic setting as well. Of course, students can use ideas from this list to draw out responses from shy peers and develop their own thinking on the topic in a structured manner. Details of these activities can be found in *Appendix 3*.

Peer Learning in an Online Environment

Research on the efficacy of peer learning in an online environment versus a face to face set up is sparse. However, common tools of peer learning, referenced in the previous section, such as group discussions, group projects or assignments, socratic questioning, paired teaching, case studies, role plays, online student panels and calibrated peer review can be easily migrated to an online environment. Students are used to employing collaborative software to work on group projects. As an additional step, breakout sessions and supervised online meetings among student groups can be set up to facilitate other modes of online peer learning.

Simple modifications to the usual tools can work wonders. For example, instead of reviewing and grading students' online discussion posts yourself, you can ask your students to review each other's

¹⁷ Goodlad, S. (1999). Never Knowingly Oversold: a watchword for tutoring and mentoring schemes? Paper presented at the 2nd BP Regional Conference on Tutoring and Mentoring, Perth, Western Australia.



assignments. Communicate the objective of the exercise to the students, share a grading framework and incentivize them to provide a constructive and honest feedback¹⁸.

¹⁸ <https://edtechreview.in/e-learning/3632-how-to-incorporate-peer-to-peer-learning-in-online-classes>

Appendix 1: Tools and Software for Facilitating Peer Learning¹⁹

Student Response Systems	Peer Assessment and Review	Discussion Platforms	Video Recording
<p><u>Mentimeter</u></p> <ul style="list-style-type: none"> - User-friendly; works well on mobile devices; free account - Real-time input from students in the form of polls/quizzes/Q&As and more - Students interact with peers from different schools 	<p><u>WebPA</u></p> <ul style="list-style-type: none"> - Online shared service designed by Loughborough University - Facilitates peer-moderated marking of group work 	<p>Student Portals</p> <ul style="list-style-type: none"> - University online forums allow students to discuss their learning and ask questions 	<p><u>Camtasia</u></p> <ul style="list-style-type: none"> - Faculty/students can record quick video lessons and share with the class - Record your screen - Add effects
<p><u>Kahoot</u></p> <ul style="list-style-type: none"> - User-friendly; works well on mobile devices; free account - Play kahoots (student groups) in team mode to boost communication and teamwork - Gather opinions of learners through poll questions 	<p>Rubrics</p> <ul style="list-style-type: none"> - An assessment tool that's based on a list of criteria for achieving a task - A scale for grading the different levels of achievement 	<p><u>Piazza</u></p> <ul style="list-style-type: none"> - Free Q&A platform for students - Wiki-style formats - Integrates with every major LMS - Customizable online polls 	<p><u>Screencast-o-matic</u></p> <ul style="list-style-type: none"> - Free, user-friendly tool - Students can record their ideas and opinions, which can be shared with their peers in class
<p><u>Socrative</u></p> <ul style="list-style-type: none"> - User-friendly; works well on mobile devices; free account - Works for small groups - Real-time assessment of students is possible through quizzes, surveys, and team activities. 	<p>Paired marking</p> <ul style="list-style-type: none"> - Pairs of students interchange and assess each other's work - Assessment is done by using rubrics or by applying success criteria to each other's work 		
	<p><u>Feedback Fruits</u></p> <ul style="list-style-type: none"> - The tool is currently at the testing stage - Faculty can use this tool to guide students in reviewing each other's work - It also has a voting feature 		

¹⁹ <https://www.rug.nl/e-learning/projecten/flipped-classroom/methods-and-tools-a-comparison?lang=en>
<https://theeducationhub.org.nz/wp-content/uploads/2019/08/Eight-tools-for-peer-and-self-assessment-.pdf>

Appendix 2: Guidelines for Developing Rubrics

Guidelines for Developing Rubrics

- Create one rubric per assignment per semester
- Ask colleagues for the rubrics they use or look at developed rubrics for similar assignments online
Association of American Colleges and Universities and *RubiStar* help you develop rubric templates
- Examine and outline the elements or critical attributes to be evaluated
The *attributes* should be objectively measurable
- For each element, create an evaluative range for performance quality
For e.g., *Excellent, Good, Satisfactory, Unsatisfactory*
- To qualify each level of performance, there should be descriptors
Add objective indicators. Do not use vague criteria like 'interesting', 'creative', etc.
The criteria should be able to differentiate one performance level from the other
For each level, assign numerical scales
- Once you develop a rubric, share the draft with your colleagues/TAs for feedback. Rework if needed
- Train your students to provide peer feedback based on your rubric
Once they use the rubric, you will know whether the rubric is clear to them or has loopholes

Source: Adapted from <https://teaching.cornell.edu/teaching-resources/assessment-evaluation/using-rubrics>

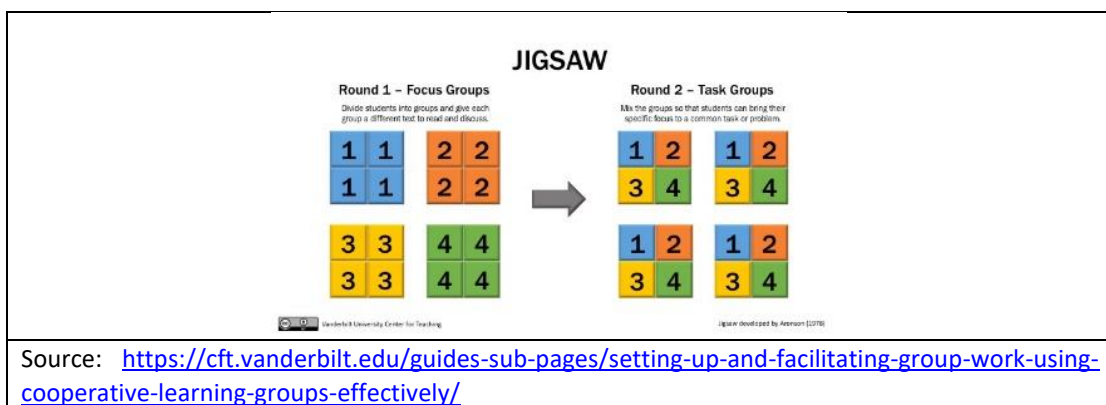
Appendix 3: Other Cooperative Learning Activities

- **Reflective Learning Assignments²⁰**

Reflective learning assignments attempt to measure capacity to analyse and evaluate experience in light of theories and research evidence. Students may be asked to maintain an individual learning journal. Regular entries in the journal would enable them to reflect in a purposeful, theory-informed and structured way on critical group incidents and one's own actions. Over time, students would improve at group interactions. Learning journals should be assessed. It would help to allocate a reasonable percentage of marks to journal writing as it would provide an incentive for those students who find reflection a chore.

- **Jigsaw²¹/Experts²²**

In this technique, groups are given different topics (say segments of new material to be covered as part of the curriculum). They study the topic and become 'experts' on it. The class then rearranges and the groups are mixed up in a manner that each group has at least one expert of each topic. Then the 'experts' take turns teaching their material to each other. Read more about this technique [here](#).



- **Quiz and Find²²**

In this technique, students write a question about a topic on a piece of paper. Then they must walk around the class and find someone who can answer it. They must also try and answer questions.

- **Showdown²²**

Students sit in a circle and the facilitator asks a question. The students must write their individual answers on a large sheet of paper or a board. When the facilitator calls 'showdown', all the answers must be shown. This is followed by a discussion on various answers.

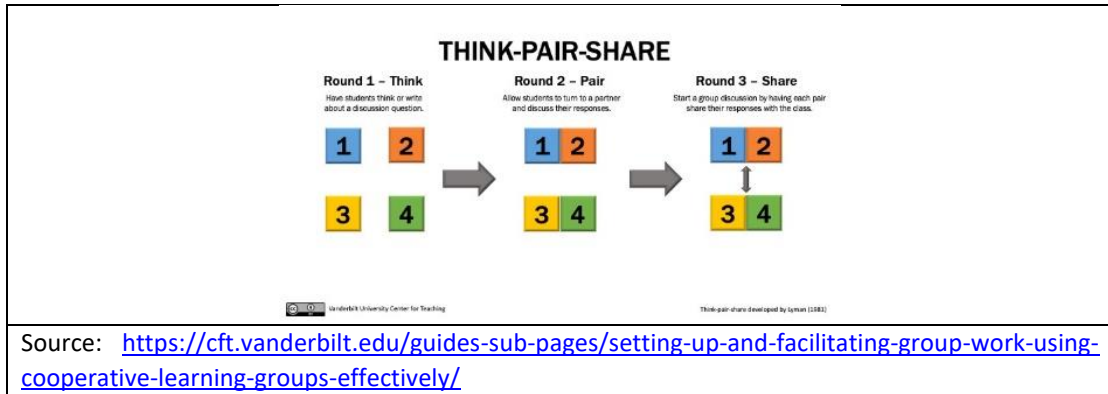
- **Think-Pair-Share²²**

A question is posed to the class. The students are given time to think or write the answer, after which they discuss the question in pairs or groups. This is followed by a class discussion where groups share their answers.

²⁰ Boud, D., Cohen, R., & Sampson, J. (2014). *Peer learning in higher education: Learning from and with each other*. Routledge.

²¹ <https://cft.vanderbilt.edu/guides-sub-pages/setting-up-and-facilitating-group-work-using-cooperative-learning-groups-effectively/>

²² <https://edtech4beginners.com/2017/08/03/10-top-cooperative-learning-strategies-and-some-tech-tools-that-could-come-in-handly/>



- **Circles²²**
The class arranges itself in two concentric circles of students facing on another. The facilitator asks a question and the pairs discuss it. After this the facilitator says a number or calls out a direction (move left by 2 students), and the outside circle moves accordingly. The discussion resumes. The activity can go on until all possible pairs have discussed and end with a class discussion. This strategy is also called the doughnut or inside outside circle.
- **30 second speech (Elevator Pitch)²²**
Students have to prepare a 30 second pitch on a new topic or a response to a question posed by the facilitator. Then they turn to their group or pair up and give their 30 second speech.
- **Gallery Walk²²**
At the end of a lesson, the students leave their work open. They walk around and view other student's progress. They can use sticky notes to make constructive comments. As a modification, facilitators can also use this strategy to present new material to the class by posting questions on the walls around the class (using flipcharts, whiteboards or printed sheets). At the end of the gallery walk the students can be grouped and can discuss their conclusions from the evidence presented. You can read more about gallery walk [here](#).
- **Round Robin²³**
Students discuss a problem or a topic, in pairs or small groups, talking in turns (one at a time). The problem should be of a kind where multiple answers are possible. The group can have an object that can be passed between members to determine whose turn it is to speak. The students work together to come up with an answer on which they all agree.
- **Three-step Interview²⁴**
This technique can be used as an ice breaker or to know concepts in depth by assigning roles to students. The students break into pairs. The faculty assigns roles of interviewer and interviewee and may also give information that must be 'found'. The interviewer interviews the interviewee for a specified number of minutes after which the roles are reversed. The process resumes for the same duration after which each pair turns to another pair, forming a group of four. Each member of the group talks about the most interesting points which she has learnt from her partner.
- **Roundtable²⁴**

²³ https://knilt.arcc.albany.edu/Examples_of_Cooperative_Learning_Strategies

²⁴ <https://www.utc.edu/walker-center-teaching-learning/teaching-resources/cooperative-learning.php#structures>

This technique lends itself well to brainstorming. It can be used to generate a variety of responses to a question which can have several right answers. Students are divided into groups and are armed with a paper and a pen. The faculty poses a question. The student with the paper and pen writes his response, says it out loud and passes the paper to the left, the other students do likewise. A student may say pass and take the turn when the paper comes around again. This continues until time is called. At the end groups may discuss among themselves or share the list of responses with the entire class.

- **Group Roles²⁴**

While working in groups, it is a good idea to assign roles to various members of the group. The role assignments can be done by the students or by the facilitator. Potential roles can be leader, recorder, reporter, monitor and wildcard (assistant to leader or filler for any member who may be missing). The assignments can be rotated periodically. This structure will formalize group interactions and prepare students for the future (work life).