

CHAPTER 16

Peer facilitated learning

Sanjeev Sonawane & Nidhi Waldia

Docendo discimus – “the best way to learn is to teach”

INTRODUCTION OF THE TOOL AND LINKING TO THE RELEVANT SKILL

Frank Oppenheimer emphasized the old Latin principle “Docendo discimus” – “the best way to learn is to teach”. Following a similar principle, “Peer facilitated learning” engages students in class-wide and reciprocal peer tutoring to facilitate student learning. Co-operation between peers, according to Piaget (1971), is likely to foster the exchange of thought and discussion. He emphasised that cognitive conflict caused by the multiple perspectives during the peer interaction and the deemed cooperation is necessary for the formation of a critical mindset, objectivity, and discursive reflection. Furthermore, Vygotsky (1962) suggested that the variety of skills and learning gained by collaboration with peers is richer than anything that can be attained alone. The tool “Peer facilitated learning” is a structured peer tutoring pedagogical approach based on social constructivism that mixes reciprocal peer tutoring and class wide peer tutoring. Using PFL technique of peer tutoring can enhance students’ experience of collaborative learning and knowledge co-creation. The PFL model of peer tutoring doesn’t involve a ‘deficit’ model for ‘fixing’ the needs of one child but rather seeks to be a tool for thinking collectively and engaging in co-reasoning. **The tool can help foster analytical and critical thinking skills, articulation and rational argumentation skills, research, and team-work skills among the pupils.**

Nancy Falchikov (2002) in her review of several research on peer tutoring found that peer tutoring can have positive outcomes in the following domains:

- Academic outcomes.
- Metacognitive outcomes like learning how to learn and transfer of learning.
- Study skills outcomes.
- Non-academic outcomes like motivation, attendance, retention, and attrition.

These benefits of peer tutoring have motivated several academic institutions to adopt one or more type of peer tutoring methods into their curricula. However, there are two sets of problems that occur.

- First, although teachers in almost all educational institutions are seen as assigning group work to students, the peer learning activities usually are unstructured.
- Besides, even when students are assigned collaborative assignments, the end result is frequently patched-together individual efforts delivered just before the due date (Dunn, 1996).

According to a study conducted by Gillies in an Australian school setting, it was found that in a sample of 223, 13–14-year-old students, adding structure to peer learning activities resulted in more effective group learning situations and enhanced academic attainment (2004).

Therefore, structuring peer tutoring and peer learning activities is imperative to ensure that the envisaged benefits of peer tutoring are achieved. “Peer facilitated learning” offers an opportunity to structure peer tutoring activities by using artifacts like group process form, group conduct form, and designated roles. Moreover, the teacher remains informed about the group process by obtaining regular minutes of meetings from the groups and by monitoring the group process. Such structuring of peer tutoring activity ensures that students engage in true collaborative learning.

THEORETICAL BACKGROUND

The tool “Peer facilitated learning” is rooted in social constructivism, as explained by Thurston et al. (2007).

Cognitive developmental theory: the work of Piaget

Piaget (1932) emphasized that ‘the very nature of relationship between the child and adult that places the child apart, so that his thought is isolated.’ In contrast to adult-peer relationships, power in peer-peer interactions is distributed more symmetrically and is more likely to be shared (Blatchford et al, 2003). Piaget’s theories of collaborative learning stems from the concept of equilibration. According to Piaget, when a child encounters new information, they try to modify it to fit it into their existing schema [assimilation]. If the new information is not in accordance with the existing schema, the child tries to modify the existing schema to fit the new information. Learning is characterized by the adaptation of schemas. The adaptation of schema occurs when assimilation and accommodation are in balance. When a child encounters a new idea that is incongruent to their own, they experience cognitive conflict. Cognitive conflict can be defined as a conflict between existing schemas (i.e., an organized knowledge structure in the brain) and environment (i.e., concepts in a book, peer’s opinion, teacher’s

instructions, etc.), or a conflict between conceptions in cognitive structure (Kwon, 1989, as cited in Kwon & Lee, 2003). This state of disequilibrium motivates the child to keep seeking for a solution through assimilation and accommodation, and thus adapting to the new schema to make sense of the new information (Woolfolk, Winne, & Perry, 2003) and achieve equilibration. Equilibration is more easily established between peers than between child/teacher as in the case of peer-peer interaction, cognitive structures are more open to adaptation and less prone to conservation (De Lisi & Golbeck, 1999). Peer learning, according to Piaget's theory of cognitive development, has a higher likelihood of cognitive structuring because peer learning environments can provide the correct balance between disequilibrium induced by cognitive difficulty and social interactions between peers, allowing for effective learning (Palinscar, 1998).

Vygotsky's zone of proximal development

Cognitive abilities, according to Vygotsky's theory of cognitive development, are socially constructed, with children learning their cultural values, beliefs, and problem-solving strategies through collaborative conversations with more informed members of society. The Zone of Proximal Development (ZPD) defined as "the distance between the actual development level as achieved by engaging in independent problem-solving and the level of potential development as achieved by engaging in problem-solving under adult guidance or in collaboration with more capable peers" in the Vygotskian framework, highlights the importance of peer learning. The principles of intersubjectivity, which lead to more effective intra-psychological functioning, are central to operating within the ZPD. The degree to which two individuals can participate in communication and dialogue that transcends their respective worlds/minds is known as intersubjectivity. Adults may struggle to transcend to the child's world (Donaldson, 1978). Peers may thus provide a more conducive environment for intersubjectivity and cognition. Vygotsky's psychological model emphasised the importance of discourse in mediating cognitive growth, claiming that learners can "perform... in collaboration with one another what they have not acquired alone." In order to allow internalization and long-term cognitive progress, Vygotsky determined that peer interaction in the learning process was necessary.

LITERATURE REVIEW

According to the World Economic Forum report of January 2016, human civilization is standing on the precipice of the 4th industrial revolution that will radically transform the way we live, work and interact with each other. The technological advancement accelerated by the fourth Industrial revolution will change the core competencies required in the workplace and life. The disruption in the skill set requirement caused by the fourth industrial revolution will increase the

demand of social skills (like persuasion, emotional intelligence, and teaching others), content skills (like ICT literacy and active learning), cognitive abilities (like creativity and mathematical reasoning) and process skills (like active listening and critical thinking) across industries (World Economic Forum, 2016, pp. 20-21). Furthermore, according to the systematic review conducted by Chowdhury and Murzi (2020), teamwork was one of the most important core competencies that will be needed in the workplace as we enter 4IR. To mitigate the impacts of the fourth Industrial Revolution on the workforce and employability, the educational institutions should be prepared to promote core competencies including persuasion, emotional intelligence, teamwork, ICT literacy, active learning and creative and critical thinking among the students. Peer teaching has been recognized as a teaching strategy that benefits students in all of the above domains.

In their study “Peer tutoring as instructional method: a systematic approach,” Kapil and Malini (2018) define peer tutoring as a teaching style that employs students as tutors. In this instructional strategy, student pairs may concentrate on academic, social, behavioural, functional, or social skills. Depending on the three key variables, viz. the status of participants; the location of the activity; and the roles undertaken, peer tutoring can be of different types [Falchikov, 2002, p. 8]. “Peer facilitated learning” is a technique that combines the “Reciprocal Peer Tutoring” and “Classwide Peer Tutoring” approaches. According to Falchikov (2002), “Reciprocal peer tutoring” [RPT] is a type of peer tutoring that allows each student to play the role of both tutor and tutee, reaping the benefits of both teaching and being taught by. Meanwhile, “Classwide Peer Tutoring” takes place at the same time for all tutor-tutee pairings, encompassing the entire class. Teachers break down the academic information to be tutored into daily and weekly units and prepare these resources for use in a peer teaching setting. During sessions, the teacher can watch and monitor the pupils and their reactions while using CWPT.

There have been several studies on the benefits of Peer tutoring. According to Nancy Falchikov (2002), peer tutoring can benefit students in four main domains namely: academic, non-academic, metacognitive and study skills. Several researchers agree that peer tutoring is the one of the most cost-effective interventions to improve academic, social, behavioral, functional, or social skills (Kapil and Malini, 2018; Goldschmid and Goldschmid, 1976).

Academically, peer tutoring has been found to increase literacy scores, promote development of reasoning and critical thinking (Kapil and Malini 2018). Moreover, Reciprocal peer tutoring was effective in lowering exam anxiety and increasing higher examination scores among students (Fantuzzo et al., 1989; Griffin and Griffin 1998). Besides, cross-age peer tutoring, according to Lindsey and Watts (1979) leads to improvements in students’ academic performance and interest towards academic endeavours, preventing students from dropping out. Furthermore, Millis and Cottell (1998) affirm that reciprocal peer tutoring

focuses on “integrating knowledge, active learning, student–student interactions and immediate feedback” allowing students to commit information to memory and promoting deep learning. Peer tutoring has been found to benefit both tutor and tutee. Witherby asserts that his Peer Assisted Study Scheme (PASS) boosted the ability of mentees to adapt acquired skills and competences to other courses, as well as the mentor’s academic performance and confidence (1997).

In terms of socio-psychological learning, peer tutoring has been found to benefit students in improving social skills and resolving behavioural issues (Kapil and Malini, 2018). Cross-age peer tutoring helps improve students’ self-confidence, self-image, social behaviour, attitude and encourages them to clarify and prioritize their values (Lindsey and Watts, 1979). Besides, when students learn to practice judgement during peer evaluation tasks, there is an improvement in their self-esteem, and value clarification (Bruffee; 1978).

Toppings (1996) through meta-analysis of several studies affirm that peer tutoring very often benefits students with special needs in socioemotional domains of functioning. Peer tutoring improves students’ attitudes toward the academic areas being tutored and towards the school. Moreover, it has been found that peer tutoring improves attitudes toward authority, development of cooperative behavior, reduction in antisocial acts, engagement in friendlier play, and neater dressing.

Grasha (1972) found that the “teacher-of-the-day” scheme which gives student teachers an opportunity to contribute to lesson delivery activities like giving lectures, leading discussion, performing demonstrations, running experiments, and so on helped the author address the problem of student absenteeism.

“Peer facilitated learning” engages students in the process of critically evaluating each other’s work. Bruffee (1978) found that including students in the task of evaluating each other’s academic writing improved students’ writing skills, and lowering of failure rates to approximately zero.

Overall, peer tutoring benefits students in promoting their cognitive and social skills that are some of the core-competencies required for the jobs of the future. Peer tutoring also gives students an opportunity to engage in democratic processes within their groups where they hold accountable roles; thus, it helps them practice the spirit of participatory democratic citizenship.

EXPLANATION OF THE TOOL

The tool “Peer facilitated learning” enables teachers to engage students in a meaningful peer learning experience. The tool can be used in any subject and requires some amount of planning on part of the teacher before the semester starts. The tool is a combination of reciprocal peer teaching and classwide peer teaching.

Reciprocal peer teaching allows each student to take on the roles of tutor and tutee, reaping the benefits of both teaching and being taught. Classwide peer tutoring refers to the strategy in which the student acquiring the role of the tutor

teaches the whole class. The PFL tool engages students in brainstorming, research, discussion, self and peer assessment, peer monitoring, and presentation.

Peer assessments entail students making broad judgments about their peers' work based on clear and explicit criteria. In PFL, peer assessment entails constructive discussion and the offering and receiving of rich feedback to help students improve their learning outcomes.

EXPECTED OUTCOME

1. Students' engagement in group assignments will enhance their writing and reasoning skills.
2. Students' engagement in reciprocal teaching will enhance their articulation and presentation skills.
3. Students' involvement in the group process will enhance student belonging and social inclusion.
4. The learning outcome of the topic assigned to the PFL task will be achieved.

NUMBER OF PARTICIPANTS

The number of members in each PFL group should not exceed 6 and should not be less than 4.

ROLE OF STUDENTS

Students in the PFL activity take different roles to structure the group process. The student can be designated one of the following roles based on activity (Johnson, et al., 1991; Millis and Cottell, 1998; Smith, 1996).

- **Facilitator:** Leads group discussion, keeps everyone on track, and distributes tasks.
- **Record Keeper:** Takes notes on team meetings and decisions and maintains all essential records.
- **Reporter:** Represents the group to the class or instructor, outlining its activities and/or conclusions.
- **Timekeeper:** Reminds the group of time limitations and deadlines, as well as ensuring that meetings begin on schedule.
- **Devil's Advocate:** Presents counterarguments and (constructive) objections, as well as alternate explanations and solutions during group meetings.
- **Harmonizer:** While allowing a full expression of ideas, the harmonizer attempts to achieve consensus and build a harmonic and positive team environment.
- **Prioritizer:** Ensures that the group concentrates on the most critical topics and is not distracted by minor details.

- Explorer: Looks for new opportunities in situations and individuals (teammates and the whole class), as well as new areas of inquiry.
- Innovator: Promotes creativity and brings new and different viewpoints and ideas.
- Checker: Ensures that everyone in the group understands the concepts and the group's findings.
- Runner: Gathers necessary materials and serves as a link between the group and the teacher.
- Wildcard: Assumes the job of any absent team member and fills in the gaps.

Apart from playing the aforementioned roles in the PFL meetings, the students need to participate in group writing assignments at the end of each unit.

ROLE OF TEACHER

The teacher has the following role in using the PFL tool.

1. **Structuring course content to accommodate PFL tasks:** The teacher needs to structure the course content in such a manner that one Unit of the course is divided into subtopics that can be designated to PFL groups as their tasks. The topic designated to PFL groups should not be: too short, too detailed, too easy or too advanced. Moreover, teachers should ensure that the units that are not assigned as PFL tasks should also entail one group writing assignment to be done in the PFL groups.
2. **Making peer groups:** Teachers can form groups in one of the following two ways. One, she can randomly form groups using chit picking. Second, teachers can use sociometric grouping for creating a socially diverse group of pupils to work together. For this, each group should have both high performing and low performing students.
3. **Briefing of the groups:** Teacher is required to brief the students about the objective of the activity and how it will be conducted. She should acquaint the students with their role in self-assessment, peer-assessment, group writing assignments, PFL groups, and PFL presentations.
4. **Facilitate students in creating their group conduct form and group process form:** Teacher should provide students with guidelines to form group conduct form and group process form.
5. **Design rubric for cross group evaluation:** According to the objective of the topic assigned to the groups, the teacher should independently or in collaboration with students create rubrics for cross-group evaluation.

STEPS TO USE THE TOOL

The PFL activity has the following three stages:

1. **Activation:**

PFL involves randomly dividing the class into groups in the beginning of the academic year such that each group has an equal number of students. Each group is thereafter assigned a topic and each member of the group is assigned a role. The PFL groups come up with a contract about the roles, responsibilities, and ethics of the group. A contract can state a group's ethics, policies & procedures about group goals, participation, communication, conflict resolution, consequences if policies are violated, responsibility towards one's own group, responsibility towards the classmates, & deadlines. Then, each member of the team can be designated a role. The roles you assign will depend on the goals of the assignment, the size of the team, etc. The roles can be fixed or rotating.

Group assessment: Each member of a PFL group evaluates all the members of his/her own group, his/her own group, one member of every group, and every PFL group. The evaluation rubric to evaluate other groups can be collaboratively designed by the students or can be designed by the teacher on the basis of what she/he deems as the objective of the activity. The possible areas of evaluation of one's own team may include clarity of goals, extent of participation, seriousness about the group process, adherence to timeline, etc. The individual members from one's own team can be evaluated on the basis of how well they perform the designated role and how fairly they align with the group contract. The members of other teams can be evaluated on how fluently they presented the topic and how well they answered the questions raised regarding the topic.

2. **Group process:**

The group meets regularly to discuss the work they have completed and work they need to complete. In these meetings each group member performs the function assigned to him/her during the group contract making. Moreover, the teacher structures each unit of the course such that each unit has an assignment that requires group work. The teacher has regular meetings with the groups to evaluate their group processes and work timeline.

3. **Presentation:**

The group presents their topic to the class, where each member receives qualitative feedback [feedback from members of their own team, one member from each team, feedback from teacher, feedback on team performance from other teams] about their performance and ability to articulate the as-

signed topic. – Such feedback helps the individual identify intrapersonal, interpersonal, and content related areas of improvement.

ASSESSMENT

The assessment of the group process is done using the group process assessment form attached in the appendix. Moreover, the recorder and the reporter submit the information about the meeting after each meeting to the teacher. This helps the teacher monitor the process. The teacher evaluates the group process at the end of each month where she sits with the group and cross-checks them on the basis of prior reports.

Furthermore, the PFL activity has a component of collaborative writing, wherein students are given a group assignment each week or once in two weeks on which they have to write together. The student's participation in group assignments is also recorded and reported to the teacher. The teacher pitches all the responses to the students and asks them to evaluate the best responses and provide the argumentation for the same.

Moreover, each group also evaluates other groups based on the curricular objective of the concept they taught and their presentation skills.

The teacher can show the specimen attached in the appendices to the students to help them understand the significance of each document. Thereafter, the teacher can encourage the students to create their own contracts, group process documents, and group process assessment forms.

CONCLUSION

We are steadily moving towards a future where machines are becoming an indispensable part of our lives and the surplus of information available at a click of a finger is overwhelming. To handle this information overload and technology interdependence, there is a need to foster democratic citizens who are critical, creative, and analytical. The tool will help students experience democratic decision making in early years of their lives giving them a head start into tomorrow. The tool can help students learn the skills including enquiry, collaboration, communication, empathy, respect and tolerance. The tool will encourage the students to learn the importance of active listening in collaboration and the role of collaboration in innovation. In the coming technologically advanced age of tomorrow, such skills will enable the students to become lifelong learners who are able to learn, unlearn and relearn so that they remain relevant to the job marketplace.

APPENDICES

Appendix I

PFL - Group Conduct Document

Group Name:

These are the ground rules for group behaviour and collaboration that we have agreed to as a group.

Participation: We agree to...

- Respect ourselves and others.
- Come prepared with the part assigned to us.
- Stay focused on the task.
- Support others when I can.

Communication: We agree to...

- Be an active listener.
- Ensure that everyone gets a chance to speak.
- Offer and accept constructive feedback gracefully.
- Critique ideas rather than people.
- Not to interrupt people while they are speaking.
- Actively ask for help when I am confused.

Meetings: We agree to...

- Beginning every meeting on time.
- Meet biweekly/weekly/...
- Perform the assigned roles actively throughout the meeting.
- Maintain decorum during the meetings.
- Maintain meeting records.

Conduct: We agree to...

- We agree to respect ourselves and others.
- We agree to convey our disagreement.

- Keep open mind.
- Attend and arrive on time for all group meetings.
- Allocate fair share of work to every member of the group.

Conflict: We agree to...

- We agree to convey our disagreement with each other with respect.
- Be open to compromise and collaborate on ideas.
- Confront the group member who is not able to fulfil his/her role to understand their problem.

Deadlines: We agree to...

- Schedule a deadline for each task that we allocate within the group.
- Respect each deadline and do not seek extension till extremely necessary.
- Complete and review all the tasks assigned by the teacher one/two days before the deadline set by the teacher.
- Submit our work before the deadline set by the teacher.

Name of Team Member	Signature

Appendix II

PFL Group Process Format

Group Namer:

Date:

GOALS: What are our team goals for this assignment?

How do we hope to achieve? What abilities do we want to develop or improve?

- We want to understand the concept of and/or acquire the skill

To achieve this, we will

EXPECTATIONS: What do we expect of one another in terms of meeting attendance, engagement, communication frequency, work quality, and so on?

- We expect every member of the team to complete the work allocated to them before the deadline so that we can review and revise the final submission for the course. We will ensure that our assignment will not be a patched together work but a well-drafted document which will help understand the [concept on which the group has elucidated]. The timekeeper will daily follow up with the group on their progress in the task.

POLICIES & PROCEDURES: What norms can we agree on to assist us achieve our objectives?

- We will explore the concept with integrity and will ensure that all the members of the group have fully participated in the task. We will ensure that each member of the group understands the task and agrees with the timeline and role allocation.

CONSEQUENCES: How will we deal with non-compliance with these objectives, expectations, rules, and procedures?

- If anyone in the group is not able to comply with group rules, we will try to understand the reason behind their non-compliance rather than being judgmental. We will encourage each other to comply with the rules. We will not shy away to seek teacher's support if we are not able to smoothen the group process.

We agree to these policies, procedures, and punishments because we share these goals and expectations.

Team member's name

Team member's name

Team member's name

Team member's name

Appendix III

PFL- Group Process Assessment

Name of the group:

Assessment date:

Attendees:

Number of assessments:

Please select the box that best represents the degree to which each statement applies to your group.

		To a very little extent	To a little extent	To a great extent	To a very great extent
1.	The team members are clear about the team goals and are fully committed to achieving them.				
2.	We collaborate and cooperate with each other.				
3.	The group is concerned about the quality of the work.				
4.	We have high performance expectations.				
5.	Some members are too casual with our group's task.				
6.	Some team members who have good ideas don't speak up.				

		To a very little extent	To a little extent	To a great extent	To a very great extent
7.	For fear of offending others, some members of the group would not disagree.				
8.	Some members of the team act as though they know everything.				
9.	The group discussions are often dominated by one or two members.				
10.	We pay attention to what each person has to say.				
11.	Members of the team are encouraged to express both positive and critical comments.				
12.	An atmosphere of trust exists in our group.				
13.	We are comfortable in the roles we play in the group.				
14.	Members are hesitant to ask for or provide assistance.				
15.	Individuals' abilities, knowledge and experience is not well utilized.				

What is the group's assessment of its own process? What areas does the group need to work on? What is your strategy for dealing with this?

Appendix IV

Feedback on the individual presenter:

1. Subject. Was the presentation informative? Did it have a clear focus?
Was it well researched?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

2. Organization/Clarity. Was it easy to follow? Were key ideas and concepts
discussed in a manner that allowed you to engage with them easily?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

3. Sensitivity to audience. Did the speaker maintain eye contact with all
members of the class? Did s/he give you time to take notes as needed?
Did s/he repeat the main ideas more than once? Did s/he make effective
use of pauses, gestures, change in pace and pitch?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

4. Visual aids. Did the speaker make effective use of handouts, overheads
and/or the blackboard? Were overheads or board writing large enough
to see easily?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

5. Activities and classroom engagement: Did the speaker involve the class
in activities or discussions? Were these linked to the topics and concepts
being discussed?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

Overall grade of the individual presenter [Tick anyone]

O	A	B	C	D	E	F

One area of strength of the presenter:

One area that needs improvement:

Appendix V

Feedback on the group

1. Did all the members of the group participate in the facilitation of the session?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

2. Was preparation and practice apparent in the group? Did each member seem equally prepared?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

3. Was the session well organized? Was it easy to follow and did the overall presentation have a stated objective and a definite conclusion?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

4. Did the group show creative thinking in the organization of the classroom session? Did they get the audience involved in the classroom session?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

5. Was there evidence of the group collaborating with each other during the presentation? Did they consult each other, take notes, and contribute during the Q & A session?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

6. Did the session incorporate effective TLM and did the facilitators give clear and concrete explanations and examples?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

10. Overall, did the team connect with each other? Were other team members of the team attentive when individual members presented?

1 ... 2 ... 3 ... 4 ... 5 ... 6 ... 7

Needs improvement Excellent

Overall grade for the group [Tick anyone]

O	A	B	C	D	E	F

One key strength of the group:

One area for improvement:

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