P2P Learning | Field Work Report

Vedant B, Tommy N and Himani P

Content

Sr	Section	Page #
1	Introduction	1
2	Methodology	1
3	Results & Discussions	2
4	Conclusion	5
5	References	6
6	Appendices	

Introduction

Peer learning is defined as "the use of teaching and learning strategies in which students learn with and from each other without the immediate intervention of a teacher (Boud et al., 1999)." Other research (Markowski et al., 2021; Núñez-Andrés et al., 2022) have also highlighted the positive effect of peer learning practices in different subject areas and how they lead to increased students' knowledge, motivation, and commitment. One study (Boud et al., 2013) showed a positive correlation between peer learning and the construction of a high quality learning environment.

We are particularly interested in reciprocal peer tutoring (RPT), a model model of peer learning where participants take turn being an information provider (tutor) or a leaner (tutee) to optimize and further engage collaboratively (Griffin & Griffin, 1998; Riggio et al., 1994). Throughout this study, we used the terminologies "RPT" and "Collaborative Learning" (now on "CL") interchangeably since we had chosen to opt out of using the word "RPT" for our participants' ease. We target students or past students' to understand how they might utilize technology to navigate peer-to-peer collaborative group learning. Our study focuses on:

- identifying participants perception towards CL
- identifying the personalities preferred in CL
- learning what is required and what are the frictions in a collaborative group learning session

Methodology

Participants. To quickly gather data, we conveniently sampled from within our network—reaching out for participants using mostly based in Canada via Slack, Discord, UBC CS Graduate Email listing, and word-of-mouth. Our network included professionals (school and work) and personal (friends and family) connections. Our inclusion criteria were students or past students ages 18 years or older who are English literature of any educational background.

Study Materials. We conducted a semi-structured UBC Qualtrics questionnaire survey consisting of 20 questions (1 consent declaration, 12 multiple choice, 2 ranking based, 1 matrix table with 3 statements, and 4 open-ended shower answers). Some participants saw less questions that were not relevant to them (e.g., no major question for no post-secondary education). With ranking based questions in the survey that asks participants to rank various options, the options were considered from evidence in the literature (Cheng & Ku, 2009; Reciprocal Peer Tutoring, n.d.) (discussed later in details). The survey was conducted in English. Table 1 shows the distribution of the questions across various categories with their corresponding objective.

Sr #	Question category	# of question	Objective
0	Consent	1	To take consent from the participants before participating in the study for outlining scope of research, data collection, confidentiality and retention.
1	Basic	3	To collect demographics of the participants that includes age, education history and majors (if applicable).
2	Habits & Experiences	4	To collect participants' experience being a tutor/tutee and finding tutors in the past.
3	Collaborative group learning	6	To collect participant's view and experience on CL.
4	Matchup	2	To collect participants' experience of finding peer learners and technology used.
5	Long answers	3	To collect open-ended information on CL and technology to facilitate that.
6	Bonus	1	To collect any overall additional comments in regards to the study.

Table 1: Distribution of questions across 7 categories and their corresponding objectives

See Appendix A for a list of all questions used in the questionnaire.

Procedure. Survey was sent out on October 5, 2022 via various channels to people in our professional and personal network. We closed the questionnaire after 24 hours.

Data storage and management. For this study we used a surveying tool namely, Qualtrics with a custom license for UBC. "It complies with the BC Freedom of Information and Protection of Privacy Act (FIPPA) because the survey data is kept secure and is stored and backed up in Canada." (UBC, 2017). All data was stored locally and distributed between the team via UBC emailing.

Analysis: We used descriptive statistics to analyze the quantitative data and for long-answer we report the findings using an affinity diagram using the Figma platform. (*Figma*, n.d.)

Results

Demographics. Our survey received responses from 55 participants. Out of which, 44 responses were complete and 11 were partially filled. To address potential duplicates, we discarded the partially filled responses. The highest percentage (65.91%) of participants belonged to the age group of 21-25 years. Majority participants who had post-secondary belonged to Computer Science ((35.8%) as their majors. Refer to figures (in Appendix B) for more information on the participant's age, highest level and field of education.

Habits and experience. Out of the total complete response, 65.91% had prior experience of being a tutor, out of which 27.58% had experience of 0-1 year, 41.37% participants with 1-3 years of experience and 31.03% participants more than 3 years of experience.

Only 31.82% people reported that they have had prior experience searching for a tutor. Out of them, 42.85% found it somewhat difficult to find tutors, 7.14% found it extremely difficult, 28.57% found it somewhat easy whereas 21.42% were neutral about it.

Collaborative learning. Out of the completely filled responses, 93.18% did have prior experience with CL. Out of which 68.29% have taken a tutor role and 85.37% a tutee role. A large number **(**68.29%**)** even had experience of CL outside their classroom setting. Additionally, 79.55% typically see themselves taking both tutor and tutee roles. We also collected information about what bothers the participants about CL. Most participants (23.26%) ranked “Inactive participation of peers" as the most bothersome issue. But considering the mean across the entire ranking, “disorganization” was regarded as the most bothersome issue by the participants.

Match Up. We asked 3 questions with possible answers on a 5 point scale from “Strongly Agree” to “Strongly Disagree”. Table 2 shows the corresponding questions and findings to them in terms of percentage participants.

Questions	**Scale**		
	Strongly Disagree - Disagree	**Neutral**	**Strongly Agree-Agree**
I have difficulty finding suitable peers to collaborative learn with	30.23%	32.56%	37.21%
I have a lot of experience in collaborative learning with individual(s) outside of my class or field	46.51%	20.93%	32.56%
I find it useful to collaboratively learn with people outside of my class or field	4.65%	37.21%	58.13%

Table 2: Participants perspective on match-up for peer learning across a set of 3 questions.

We also collected information on the channel that the participants typically used to find peers for CL. Most of the participants (61.36%) ranked “Friends” as the top source of finding peers followed by classmates (29.55%).

To conclude our questionnaires, we presented our participants 4 open-ended questions. The results were less than the participant count (44) per question—which was expected since all of the questions were optional. The 4 questions were:

1. *“What do you look for in peers to effectively collaborate and learn with?”*
2. *“How could technology do more to improve your learning or teaching with other individuals?”*

3. *"How could technology help you find suitable peers to collaboratively learn with?"*
4. *"Is there anything else you would like to share regarding collaborative group learning?"*

The total open-ended questions responses were 119. We received 41, 33, 33, and 12 responses, respectively. All responses were grouped with their relative questions as individual sticky notes and then repositioned as a virtual affinity diagram on a shared collaboratibve Figma board. Each sticky note contained the response, a bolded set of codes we assigned, and the participant identification number as metadata for reference. The sticky notes were also color coded to represent which question it was responding to. To construct our affinity diagram, our team dedicated several hours to code each response and then identify potential groupings and categories. Sticky notes were duplicated to fit multiple categories, however, no notes were deleted in the process. The results were 11, 8, 12, and 5 grouping categories, respectively to our four open-ended questions. The categories and the number of associated responses can be found in Appendix C.5.

Regarding the first open-ended question, *"what do you look for in peers to effectively collaborate and learn with"*, we determined 3 overarching themes that encapsulated the grouping categories: work ethics, knowledge, and compatibility. Here, we identified participants looking to work with organized peers demonstrating strong work ethics who are willing to work, learn, and can communicate well. Participant #9 embodies the ideal persona with their response *"Willingness to communicate, effectively organize priorities and standards."* Participants are also looking for knowledgeable peers who are either learning at their level, knowledgeable and can provide support or fill the gap in each other's knowledge. Participant #31 is looking for *"others to cover each other's weaknesses and communicate effectively."* Lastly, participants value compatibility and want to collaborate with peers who have good attitudes, are open-minded, patient, share similar goals and interests, and are able to get along with each other as friends. Sharing space with work ethics, Participants #3 and #39 seeks for *"people who I get along with and know are willing to put in effort and work"* and people who have *"similar work ethic[s], [are] open-minded, collaborators, supportive."*

For the question "how could technology do more to improve your learning or teaching with other individuals, our team identified 3 themes: people, productivity, and digital collaboration. The people theme captured how people want technology to connect with others and how people may be stronger inhibitors than technology as seen in *"The tech is fine. People are lazy."* by Participant #11. Productivity noted how participants want to improve their communication over different mediums and interactivity while also keeping track of their scheduling and timing. Lastly, digital collaboration addressed participants' needs for stronger collaboration tools to track learning within a team, optimize remote work, and share and access information. Notably, Participant #31 is looking for a super app that can do it all in a

single platform as noted in *"better integration [between] different materials, ability to share screens, links, reminders, tasks on single platform."*

The third question, *"how could technology help you find suitable peers to collaboratively learn with,"* presented 2 distinct themes. The strongest theme "matching" encapsulated 32 notes and provided insight into the various different ways participants want to match with their peers for collaborative learning. The most popular one was to connect with participants by class workshops like how Participant #28 can easily ask *"Hey I am from class [course code] looking to study X. Anyone want to get together?"* The other theme is Learning Network. This theme identified existing networks and mediums users enjoy like Piazza by Participant #20 and groups chats by Participants #16 and 25. It also found interest in *"[Creating] a social network around learning"* as stated by Participant #22.

The last question pertained to additional comments. It received the least response with only 12 reponses. No themes were clearly identified here, but the most popular grouping category was Shared Responsibility. This category has 5 notes—attributing 41.7% of the responses. Responses here mostly addressed concerns about poor participants, freeloaders, and imbalanced efforts as addressed by Participant #25 in *"I find a chief complaint is that there are inactive group members which increases the workload of students who actually contribute. But eventually the benefits are shared by the entire group which is what probably promotes the inactive behavior."*

Conclusions

Throughout this study, we were able to identify from our small conveniently sampled data set of 44 participants that CL is generally perceived well but with some limitations. We learned that our participants generally take on both learner and teacher roles which informed us that there is value in collaborative RPT and learning. We learned that technology is currently able to provide a lot for participants—particularly allowing participants to connect virtually. However, many participants still wish they could better connect with the right individuals to optimize their study. We noticed that participants have many requirements when it comes to looking for peers to study with and that there are many concerns especially when working with peers that they do not align with. One particularly interesting note is that we are limited by the individual when it comes to learning and providing knowledge.

We recognize our sample is small, however, the open-ended analysis provided insights that were very consistent across our participants—as seen from our theming. Students clearly want more control over who they learn with and how they do it. Students want more out of their technology and want a single platform that can handle all their needs. Future directions should focus on streamlining students' process in finding peers to partake in CL.

References

Boud, D., Cohen, R., & Sampson, J. (1999). Peer Learning and Assessment. *Assessment & Evaluation in Higher Education*, *24*(4), 413–426. https://doi.org/10.1080/0260293990240405https://it.ubc.ca/services/teaching-learning-tools/survey-tool

Boud, David, Cohen, R., Sampson, Technology, J. (all of the U. of, Sydney, & Australia) (Eds.). (2013). *Peer Learning in Higher Education: Learning from & with each other*. Routledge. https://doi.org/10.4324/9781315042565

Cheng, Y.-C., & Ku, H.-Y. (2009). An investigation of the effects of reciprocal peer tutoring. *Computers in Human Behavior*, *25*(1), 40–49. https://doi.org/10.1016/j.chb.2008.06.001

Figma. (n.d.). Figma. Retrieved October 7, 2022, from https://www.figma.com/files/recent?fuid=1031304641049324116

Griffin, M. M., & Griffin, B. W. (1998). An Investigation of the Effects of Reciprocal Peer Tutoring on Achievement, Self-Efficacy, and Test Anxiety. *Contemporary Educational Psychology*, *23*(3), 298–311. https://doi.org/10.1006/ceps.1998.0971

Kourea, L., Cartledge, G., & Musti-Rao, S. (2007). Improving the Reading Skills of Urban Elementary Students Through Total Class Peer Tutoring. *Remedial and Special Education*, *28*(2), 95–107. https://doi.org/10.1177/07419325070280020801

Markowski, M., Bower, H., Essex, R., & Yearley, C. (2021). Peer learning and collaborative placement models in health care: A systematic review and qualitative synthesis of the literature. *Journal of Clinical Nursing*, *30*(11–12), 1519–1541. https://doi.org/10.1111/jocn.15661

Núñez-Andrés, M. A., Martinez-Molina, A., Casquero-Modrego, N., & Suk, J. Y. (2022). The impact of peer learning on student performance in an architectural sustainability course. *International Journal of Sustainability in Higher Education*, *23*(1), 159–176. https://doi.org/10.1108/IJSHE-11-2020-0447

Reciprocal Peer Tutoring: Definition & Effects. (n.d.). Study.Com. Retrieved October 6, 2022, from https://study.com/academy/lesson/reciprocal-peer-tutoring-definition-effects.html

Riggio, R., Whatley, M., & Neale, P. (1994). Effects of Student Academic Ability on Cognitive Gains Using Reciprocal Peer Tutoring. *Journal of Social Behavior and Personality*, *9*, 529–542.

UBC, I. (2017, December 5). *Qualtrics Survey Tool*. UBC Information Technology.

https://it.ubc.ca/services/teaching-learning-tools/survey-tool

Appendices

Appendix A: Consent Form & Qualtrics Questionnaire

A.1 Consent Form

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Computer Science
2366 Main Mall
Vancouver, B.C., V6T 1Z4

Consent Form

Human-Computer Interaction Course Projects

Principal Investigator: Dongwook Yoon, Assistant Professor, Department of Computer Science, University of British Columbia, yoon@cs.ubc.ca, 604-822-1993

Co-principal Investigator: Karon MacLean, Dr, Department of Computer Science, University of British Columbia, maclean@cs.ubc.ca, 604-822-8169

Student Investigators: Bahel, Vedant, bvedant@cs.ubc.ca
Nguyen, Tommy, tommyvn@cs.ubc.ca
Prajapati, Himani, himani27@student.ubc.ca

Introduction: Thank you for participating in this study. This work is affiliated with the UBC course "Human Computer Interaction" (CPSC 544). Please note that we are seeking people who may have some experience looking for or being a tutor as well as people with experience learning in group settings (*2 or more people*).

Purpose: The overall purpose of this research is to understand how technology may improve peer-to-peer learning.

What you will be asked to do: Your are being asked to complete a questionnaire about your experiences with looking for tutors, being a tutor, and learning in group environments. This should take about 15 minutes.

How the data collected will be used: Data collected will be used for analysis and may also be used for class project presentations and other research presentations in the Department of Computer Science at the University of British Columbia. Although only a course project in its current form, this project may, at a later date, be extended by one or more of the student investigators to be submitted as a research publication.

Compensation: There is no compensation for participating in this study.

Confidentiality: The results of your participation will be reported without any reference to you specifically. All information that you provide will be stored in Canada. It will be treated confidentially and your identiy will not be revealed in reporting the study results.

Data Retention: Identifiable data will be stored securely in a locked metal cabinet or in a password protected computer account. All digital data will be encrypted. All data from individual participants will be coded so that their anonymity will be protected in any reports, research papers, and presentations that result from this work.

Contact for information about the rights of research subjects: If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time.

Your consent to participate in this study is assumed once you have completed and submitted the questionnaire.

Reference: H22-02272 (v1.1, 2022-08-31)
Project Team Name: P2PLearning

A.2 Qualtrics Questionnaire

THE UNIVERSITY OF BRITISH COLUMBIA

Consent

Please read this consent form before moving on.

THE UNIVERSITY OF BRITISH COLUMBIA

Department of Computer Science
2366 Main Mall
Vancouver, B.C., V6T 1Z4

Consent Form

Human-Computer Interaction Course Projects

Principal Investigator: Dongwook Yoon, Assistant Professor, Department of Computer Science, University of British Columbia, yoon@cs.ubc.ca, 604-822-1993

Co-principal Investigator: Karon MacLean, Dr, Department of Computer Science, University of British Columbia, maclean@cs.ubc.ca, 604-822-8169

Student Investigators: Bahel, Vedant, bvedant@cs.ubc.ca
Nguyen, Tommy, tommyvn@cs.ubc.ca
Prajapati, Himani, himani27@student.ubc.ca

Introduction: Thank you for participating in this study. This work is affiliated with the UBC course "Human Computer Interaction" (CPSC 544). Please note that we are seeking people who may have some experience looking for or being a tutor as well as people with experience learning in group settings (*2 or more people*).

Purpose: The overall purpose of this research is to understand how technology may improve peer-to-peer learning.

What you will be asked to do: Your are being asked to complete a questionnaire about your experiences with looking for tutors, being a tutor, and learning in group environments. This should take about 15 minutes.

How the data collected will be used: Data collected will be used for analysis and may also be used for class project presentations and other research presentations in the Department of Computer Science at the University of British Columbia. Although only a course project in its current form, this project may, at a later date, be

extended by one or more of the student investigators to be submitted as a research publication.

Compensation: There is no compensation for participating in this study.

Confidentiality: The results of your participation will be reported without any reference to you specifically. All information that you provide will be stored in Canada. It will be treated confidentially and your identiy will not be revealed in reporting the study results.

Data Retention: Identifiable data will be stored securely in a locked metal cabinet or in a password protected computer account. All digital data will be encrypted. All data from individual participants will be coded so that their anonymity will be protected in any reports, research papers, and presentations that result from this work.

Contact for information about the rights of research subjects: If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Ethics at 604-822-8598 or if long distance e-mail RSIL@ors.ubc.ca or call toll free 1-877-822-8598.

Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time.

Your consent to participate in this study is assumed once you have completed and submitted the questionnaire.

Reference: H22-02272 (v1.1, 2022-08-31)
Project Team Name: P2PLearning

Basic

What category of age do you belong to?

- ○ 18-20
- ○ 21-25
- ○ 26-29

- ○ 30+

What is the highest level of education you have **completed**?

- ○ Doctorate Degree
- ○ Master's Degree
- ○ Bachelor Degree
- ○ Associate Degree
- ○ Some Post-Secondary/College
- ○ High School
- ○ Some high school
- ○ [ ] Other:

What is/was your major/program specialty?

[ ]

Habits & Experience

Do you have experience being a tutor (i.e., tutoring students for a particular class)?

- Yes
- No

How much experience do you have doing this sort of tutoring?

- 0-1 Years
- 1-3 Years
- 3+ Years

Do you have experience searching for a tutor?

- Yes
- No

How difficult was the experience of searching for a tutor?

- Extremely difficult
- Somewhat difficult
- Neither easy nor difficult
- Somewhat easy
- Extremely easy

Collaborative Group Learning

Do you have experience participating in collaborative group learning sessions—where you work in **groups of 2 or more** to learn together and prepare for some course work or examination?

- ○ Yes
- ○ No

Have you had experience taking on a teacher *(tutor)* role in these sessions?

- ○ Yes
- ○ No

Have you had experience taking a learner *(tutee)* role in these sessions?

- ○ Yes
- ○ No

Do you have experience participating in collaborative

group learning sessions with individuals outside of your course?

- Yes
- No

In a group learning session, which role(s) do you *generally* see yourself taking on?

- Teacher Role
- Learner Role
- Both Roles

Rank what bothers you most in a collaborative learning session from most to least bothersome)

Bad matchup

Disorganization

Inactive participation

Lacking knowledge people

Low energy

Misaligned expectations

Poor communication

Other

Matchup

Answer the following:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	St
I have difficulty finding suitable peers to collaborative learn with	○	○	○	○	
I have a lot of experience in collaborative learning with individual(s) outside of my class or field	○	○	○	○	
I find it useful to collaboratively learn with people outside of my class or field	○	○	○	○	

Rank which methods do you use to find peers to

collaboratively learn with from best to worst

Canvas

In-class

Discord

Facebook Groups

Friends

Piazza

Reddit

Other

Long answers

What do you look for in peers to effectively collaborate and learn with?

How could technology do more to improve your learning or teaching with other individuals?

How could technology help you find suitable peers to collaboratively learn with?

Bonus

Is there anything else you would like to share regarding collaborative group learning?

Appendix B: Figures

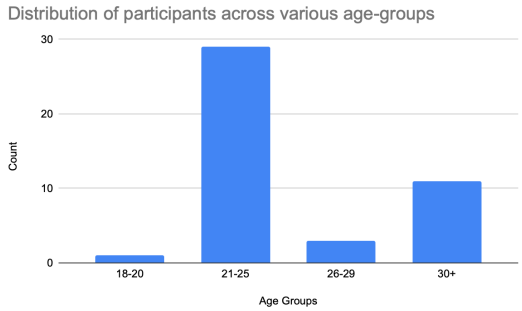


Figure 1: Age Distribution of survey participants

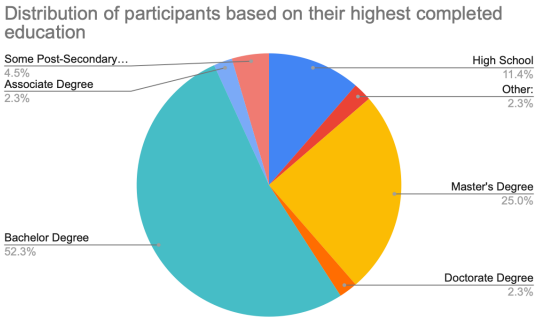


Figure 2a: Highest Completed Education of survey participants

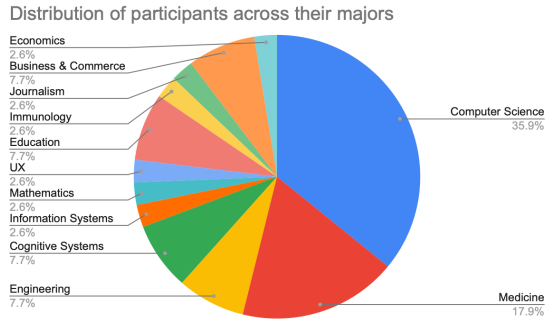


Figure 2b: Major or Program specialites of survey participants whose highest level of education was degree/diploma based

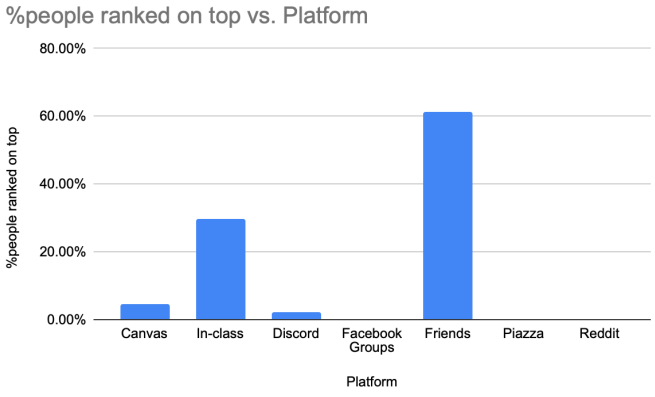


Figure 3: Top ranked peer-matching platform by participants

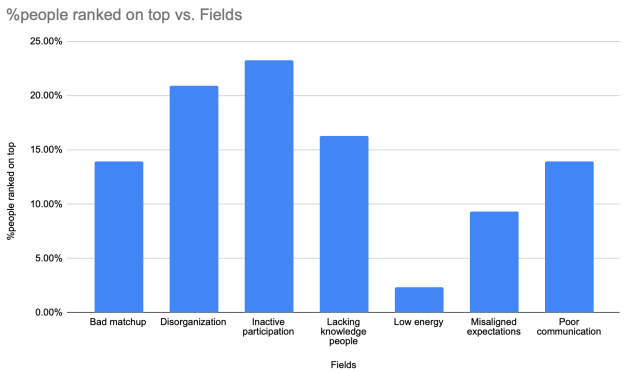
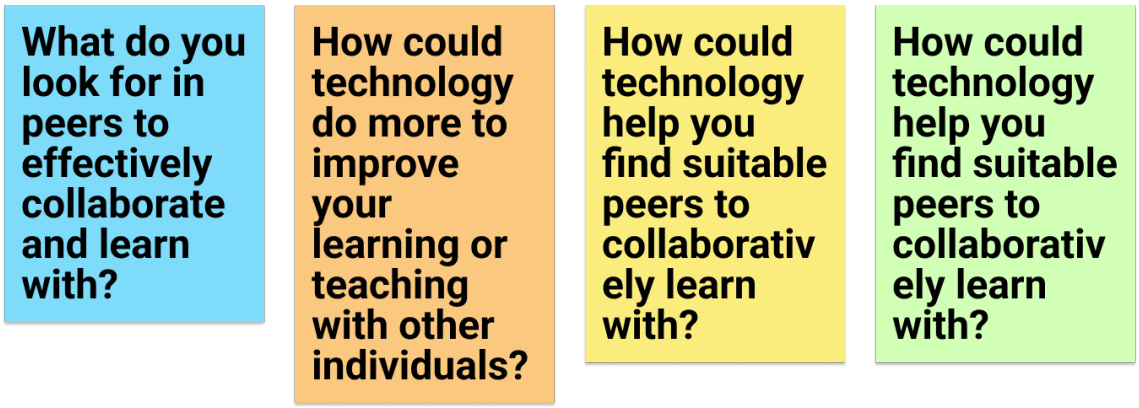


Figure 4: Top ranked reason for RPT failure by participants

Appendix C: Affinity diagram for descriptive answers

C.1: Affinity Diagram Legend



C.2: What do you look for in peers to effectively collaborate and learn with?

COMPATABILITY

THEY HAVE A GOOD ATTITUDE

comm; critical thinking; attitude
- Good communication, critical thinking, and helpful attitude.

#8

attitude & similarity
- Mental. Common ground.

#11

comm; will to work; enjoy studies
- Listening, focus, practice, enjoying studies

#26

attitude
- Right attitude and mindset, humility regarding what we learn and willing to keep each other accountable in learning

#32

similar work ethic; open-minded; supportive
- similar work ethic, open-minded, collaborators, supportive

#39

will to learn, teach, patience
- Willingness to learn and teach, and patience

#30

WE GET ALONG WELL

get along; will to work
- People who I get along with and know are willing to put in effort and work.

#3

similar goals; delegation; teaching; patience
- Mutual goals. Ability to share and split up tasks to then re-teach to each other. Patience and understanding.

#5

comm; get along
- We communicate well together and can vibe with each other

#12

get along
- Can I get along with them as friends

#16

compatability; will to work
- A mainly a good first impression, how responsive they are and interested they seem

#13

similar work ethic; compatability
- Similar work ethics & comparability

#14

WE HAVE SIMILAR GOALS & INTERESTS

similar interests
- Similar interests

#22

interested; similar goals
- Engagement, interest in topic, and focused with the same goals

#37

earger to learn; similar goals
- Eagerness to learn and similar goals on what to learn

#19

OUR TIME ALIGNS

avaiilable
- Availability

#23

KNOWLEDGE

THEY CAN FILL SOME KNOWLEDGE GAP

fill gap; good comm
- others to cover each other's weaknesses and communicate effectively

#31

smarter; fill gap
- Someone who is smarter than me and can help me with my gap in knowledge

#44

THEY ARE KNOWLEDGEABLE

knowledge; helpful
- Knowledge and helpfulness

#10

knowledgeable; will to learn
- How knowledgeable they are about the topic, and their willingness to learn and understand a topic

#18

knolwedge; studious
- Knowledgeable and studious

#40

comm & knowledge
- Communication and knowledge

#43

THEY ARE LEARNING ALONG MY LEVEL

same topic; similar level
- I look for peers who are interested in learning a specific subject and who have a similar level of understanding to me.

#35

same topic; similar level
- Students at a similar level in the course that I can collaborate with

#24

C.3: How could technology do more to improve your learning or teaching with other individuals?

C.4: How could technology help you find suitable peers to collaboratively learn with?


MATCHING
BY LOCATION
match on location
• Location matching
#38
platform for like-minded people
• Platform for like-minded individuals in your school or area.
#11
BY AVAILABILITY
match on ability and time
• It could help pair up students with similar ability levels and similar availabilities.
#24
matching on interests & time
• Finding matching topics of study interests, and time availability.
#9
BY ABILITY
match on pain points
• Might be interesting to match students based on what they are stuck on so that they figure it out together.
#19
match with smarter & willing people
• It could help match me with people who are smarter than me and willing to help
#44
match on ability and time
• It could help pair up students with similar ability levels and similar availabilities.
#24
connect on similar study area; similar level of understanding
• Technology could cluster people who are interested in similar areas of study (e.g. NP-completeness or variational inference rather than general subjects such as computer science or statistics) as well as match people with similar current levels of understanding.
#35
BY CLASS
match by class & topic
• Match via classes and topic
#2
connecting with class; peer review
• introducing classmates? Reviews from past students/ friends on if they were a good peer to study with.
#5
study groups with classmates
• Way to sign up for study groups based on class
#6
connect same class; same interests
• Making groups with people in the same class(es), interests, etc. So that you don't have to reach out and find the right people
#10
class/lab social network
• Social media for classes/labs I am in.
#34
BY WORK ETHICS
match on similar perosnality & work ethics
• match people according to similar personality and work habits
#39
match on learning style
• Match system based on learning style.
#37
find serious study people
• Find people who are serious about studying for a while
#41
BY INTERESTS
connecting on classes
• A dedicated group such as a Facebook group or group chat on Messenger, or some kind of platform where students can say "Hey I am from class [course code] looking to study X. Anyone want to get together?"
#28
connect on similar study area; similar level of understanding
• Technology could cluster people who are interested in similar areas of study (e.g. NP-completeness or variational inference rather than general subjects such as computer science or statistics) as well as match people with similar current levels of understanding.
#35
share same interests
• It helps me provide a platform to share the same interests with other peers
#23
matching on interests & time
• Finding matching topics of study interests, and time availability.
#9
connect same class; same interests
• Making groups with people in the same class(es), interests, etc. So that you don't have to reach out and find the right people
#10
BY SIMILAIRTY
platform for like-minded people
• Platform for like-minded individuals in your school or area.
#11
connect with like-minded people & similar needs
• Making it easier to connect with different groups to learn together would be a great way - essentially a way to connect like-minded people with like-minded needs
#18
match on similar background & knowledge
• To find people who have similar technical background and knowledge as myself
#8
match on goals
• matching according to specific goals
#31
connecting through network
• Connections through networks, finding similar social groups?
#14
I WANT TO SOMETHING TO FASCILITATE GOOD MATCHING
sort people by preference
• By sorting people according to preferences
#27
stronger match
• More closely matchrf
#1
tinder-style match
• Could use a matching sort of process, similar to tinder
#12
automatic matching
• Automatic pairing, collab platforms
#21
find matching
• By finding suitable match
#40
fascilitate matching
• Making a survey or test system designed to match peers together
#7

LEARNING NETWORK

I LIKE GROUP CHATS

group chat
- group chats

#16

group chats are great
- I find creating chat groups to facilitate conversations has made it easier to collaborate.

#25

learning social network
- Create a social network around learning

#22

I WANT TO CONNECT THROUGH A NETWORK

connecting through network
- Connections through networks, finding similar social groups?

#14

Piazza is good enough
- I think piazza is enough

#20

I DON'T HAVE TO MEET IN-PERSON

replace in-person
- Don't have to collaborate in person. But in person there maybe a bit more dynamic and focus

#17

I WANT PRIVACY BEFORE MEETING PEOPLE

privacy & security
- Security in personal information before meeting people to have a study session.

#26

C.5: Is there anything else you would like to share regarding collaborative group learning?

C.6: Affinity Diagram Grouping Categories

What do you look for in peers to effectively collaborate and learn with?	**How could technology do more to improve your learning or teaching with other individuals?**	**How could technology help you find suitable peers to collaboratively learn with?**	**Is there anything else you would like to share regarding collaborative group learning?**
(13 *sticky notes*) They are willing to participate, contribute, work	(5) I want to create better connections	(6) I want something to facilitate good matching	(5) Shared responsibility
(8) They have good communication	(8) Technology helps me better communicate	(6) Connecting by classes	(3) Organization
(6) They have a good attitude	(4) Technology facilitates digital and remote learning	(5) Connecting by similarity	(2) Prefer independent study
(6) We get along well	(5) I want to share and access information	(4) Connecting by ability	(1) App may be useful
(5) They are willing to learn	(3) I want to keep track of our time	(4) Connecting by interests	(1) Human interaction
(4) They are knowledgeable	(5) I want strong collaborative tools	(3) I want to connect through a network	
(3) We have similar goals and interests	(3) People are larger barriers than technology	(3) Connecting by work ethics	
(3) They are organized	(1) I want to track our learning	(2) I like group chats	
(2) They can fill some knowledge gap		(2) Connecting by location	
(2) They are learning along my level		(2) Connecting by availability	
(1) Our time aligns		(1) I want privacy before meeting people	
		(1) I don’t have to meet in-person	