## **P2P** Learning | Ideate: Tasks, Requirements and Personas

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## Content

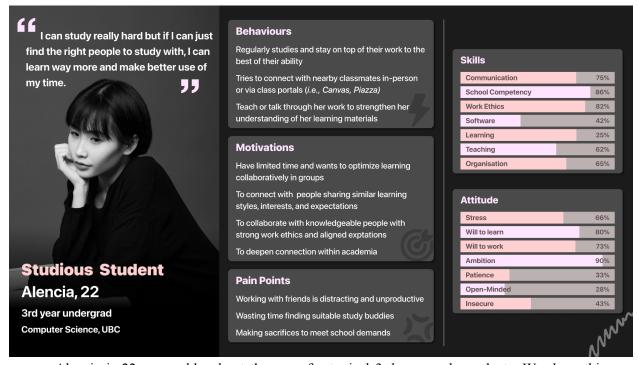
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#### 1. Introduction

From our initial surveying, we received 44 fully completed respondents to our questionnaires regarding the participants' perspectives and needs in collaborative learning (CL). We collected a mixture of objective and subjective quantitative and qualitative data. The data were analyzed using summary statistics and thematic analysis via affinity diagramming (Bahel V, N Tommy, P Himani, n.d.). See Appendix A and B for reference figures and data. To further explore our data, this report presents two main personas that have emerged from the analysis of our data. These personas are supported by three task examples that illustrate, in detail, their characteristics, behaviours, motivations, and frustrations. Those task examples are then analyzed—providing insight into the core requirements that need to be addressed in the design stage.

### 2. Personas & Task Examples

### 2.1 Primary



Alencia is 22 years old—about the age of a typical 3rd-year undergraduate. We chose this age because it sits within our most common age group where 63.9% of all respondents are between 21-25 years old. We believe a 3rd year undergraduate age is appropriate to embody an individual who has had the opportunity to work with a variety of groups and has since refined their perception and needs—knowing very well who they work well and poorly with. The Computer Science major is chosen to align with the most commonly responded major (39.9%) from our convenience sampling.

Alencia represents the ideal student to partake in CL with. Although our data, unfortunately, does not provide direct insight into our participant's personalities, it does at least inform us who our participants generally want to work with. We made the assumption that our participants are likely seeking peers that share attributes that resemble what they, themselves, envision to also possess. We do not think this is unreasonable since people generally want to work with others who align with their interests and values. From our thematic analysis affinity diagramming, we identified three themes that encompass what an effective peer in CL would look like: knowledgeable, strong work ethics, and good compatibility.

Ignoring the duplicates and no-responses, we have 61.0% (25/41) of respondents valuing work ethics. This theme encompasses strong participation, good communication, willingness to learn, and organisational skills. Within this theme, 52.0% (13/25) of those respondents value participants who participate and contribute; this represents the strongest sub-category of this theme. Good communication, willingness to learn, and organisational skills follow with 32.0%, 20.0%, and 2.5%, respectively.

In regards to how technology could aid our participants, a large 90.9% (30/33) of our participants focus on some sort of matching; this refers to utilizing technology to better optimize how a user can be connected with another peer for CL—specifically over some attributes. The most common attribute notes matching peers via classes—18.2% (6/33). This further ties into how 39.0% (16/41) of our participants want to work with compatible peers—particularly those with a good attitude (6/16) and can easily get along with (6/16).

We portrayed Alencia as a fairly competent student who optimizes her schedule really well. With such a busy schedule, we believe Alencia will struggle to exceed in every aspect of her ambitious goals and expectations. Therefore, Alencia does not want to waste any time working with peers that do not help her achieve her academic goals. Although Alencia possesses the attributes she wants in a CL peer, she is what we believe to be the typical persona because she cannot connect with a peer that aligns with her in an accessible manner. Alencia's mentality can be further understood in the following two task examples.

#### TE 1: Alencia #1

Alencia is a 3rd-year undergraduate in Computer Science. She is hardworking but extremely busy. Alencia's ambition has her schedule jam packed with five courses, personal projects, extra-curricular, and interview preparations. Aware of her limited time, Alencia stays really organized and keeps up with her study plan. Although she tends to stay on top of her work, some of her course materials and assignments can be fairly challenging—taking up much of her time. To optimize her time, Alencia believes that she can accomplish much more if she can fill in the gaps in her knowledge by learning collaboratively in a group.

Alencia has a history of working with bad group mates in projects as well as distracting peers from her own social network. She has tried to reach out to her classmates in-person and through the social platforms provided by her classes, like Piazza and Canvas, but they never really gain much traction. In the case when she does manage to connect with some classmates to collaboratively learn, she often finds that the misalignment of expectations, interests, and work ethics can be very taxing on her mental health and performance. With difficulty finding the right people to work with, she is unsure if it is worth it to continue to use her precious time in order to look for peers that match her needs as well her peers' needs.

#### TE 2: Alencia #2

Alencia enjoys teaching. She often plays both teacher and learner roles in CL. She loves a vibrant environment where everyone is discussing concepts, coming up with knowledgeable additions to the discussion solving problems collaboratively. She hates inactive members in the group. She wishes to collaborate with people who are smart, communicative, focused, committed and cooperative. However, she fails to find such people. It is difficult for her to assess profiles and information of people whom she meets in class or finds on social media. Thus, when she collaborates with them, she often finds the CL experience un-satisfactory. There's simply no relevant information about them. She wishes she could get information about the people before collaborating.

### 2.2 Secondary



Edward represents the new undergraduate population because we believe that group is a

significant user of a platform that facilitates CL, yet different in nature. New students might be overwhelmed with what they are being offered. At the same time, they might not have enough friends since they moved to a new place. A CL-facilitator might be a great advantage to them. Additionally, Edward also represents the population that is not very good at communication. He often gets nervous when he speaks and often in-turn makes mistakes. Teaching in CL space might be a difficult job for him. However, he is very interested in still being in CL space and learning. He believes such experiences will help him overcome his hurdles.

Based on the descriptive answers we collected in response to "What do you look for in peers to effectively collaborate and learn with?", many participants responded that they look for peers who are communicative, knowledgeable and have the will to learn. Although Edward has the will to learn but clearly lacks the other two characteristics making him not the very ideal person that people look for in CL. Via this persona, we wanted to address this group and try to fit them in and solace for them.

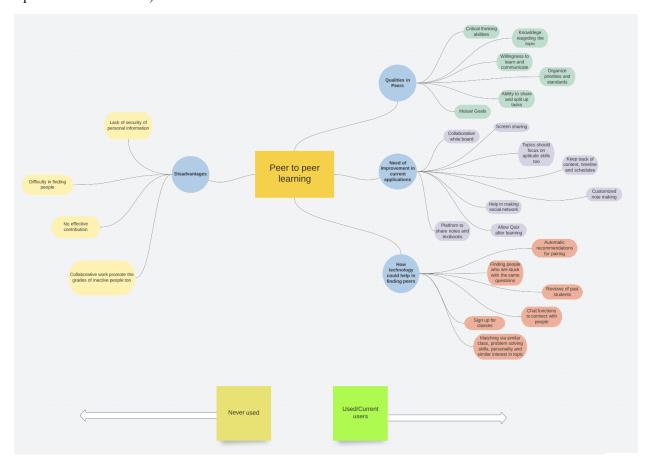
#### TE 3: Edward #1

Edward has taken PSYC101, an introduction to psychology, this term. He struggles with the concept and is looking for someone who can teach him. He is interested in finding people who have knowledge of the subject and wishes to study together with them. Although Edward doesn't have much to add in such a collaborative learning session as he struggles with even the basic concepts. Also communication is a barrier for him. He is aware that he is not doing well but wishes to work on it. He tends to get distracted when working alone and thus believes that having some help would be of great help. But Edward struggles on how he can find people to collaborate with. He is afraid of asking his classmates because he is shy and embarrassed of speaking in public or to new people. He still tries putting an anonymous post on piazza asking for peer-tutors but he is unsure what he can offer in-return. He questions if there are people who would be simply interested in teaching and teach him some concepts. A platform to find those particular people would have been of great help to Edward.

### 3. Task Analysis

The below image describes the task analysis from the survey responders highlighting four main domains with each having problem identification/solution. The right side of the image describes the responses of people who have used/currently using collaborative peer to peer learning. The drawbacks of using collaborative peer to peer learning are reported on the left side of the image. We followed four steps to task analysis i.e., Identifying the target problem, Identifying the prerequisite information, Breaking the answers, Confirming between group members (through group opinion). Four Identified

domains are 1) Quality in peers, 2) Need of improvement in current applications, 3) How technology could help in finding peers, and 4) Disadvantages (these were shared by people who had never or rarely experienced CL). The below image depicts the underlying themes (it could be a problem or solution) for each domain.



As seen in the image there are some potential issues with matching however it is broad term as it denotes matching as per the location, time, personality, habits, and goals. Some of the points like personality and habits could be difficult to match in our project as it requires minute cognitive and daily activities assessment in order to understand those two constructs. Location and time is something that we could draw attention to for the next steps. Collaborative white borad, screen sharing option and chat functions are very important in terms of using any communication technologies, so we felt some things around this to be worked on. Information on reviews of past students and quiz making helps in getting constant feedback to students in terms of their progression, so this could be focused too.

Some people were quite fuzzy about sharing personal information which is quite tricky and requires more resources, so we are not sure if this could be solved. However, our efforts will be to minimize this risk by looking at the readily available solutions. Others were lack of identifying people and less or no contribution from peers. For this, we believe that effective solutions targeting matching outcomes would help to solve this problem.

#### 4. Requirements

#### 4.1: Information about peers to assess before matching

One of the key requirements that we could identify is the need of users to have information about their potential matches. If they wish to collaborate with someone, they would want information about them relevant to their learning habits and subject. Some information like their expectations, CL characteristics (learner/teacher), knowledge of the topic, etc would be a great help. Currently used methods (social media platforms) fail in meeting this requirement (Alencia and Edward both struggled with this).

#### 4.2: Have opportunity to utilize different learning strategies (listening, teaching, discussing, etc)

Every individual is different. Some are communicative, some are not. Some are knowledgeable, some are not. As a result, some might just want to be a listener (like Edward). Some might know all the concepts and just want to teach (like Alencia). Or some might just be interested in having general discussions. Based on this, we identify one requirement i.e. how CL can be facilitated while meeting these user requirements. Furthermore, part of learning strategies could be to have a social accountability network. Working in teams may be what someone like Edward may need to strive for his target goals.

#### 4.3 Learnings beyond the course work

Although this was not addressed as heavily, our team wants to prioritize this to ensure the success of people like Alencia and Edward. We believe that if we can facilitate an environment where users are able to learn beyond what they are doing for their classes, then the learnings that they achieve for their classes are further refined and solidified. This provides our users with lifelong learning and greater fulfillment—where users can continue to grow and even return to assist others along similar paths.

#### 5. Conclusion

Despite having limited data, we thoroughly utilized our quantitative and qualitative data to better empathize with our participants and potential users. Furthermore, we utilized our team's own experience in working with undergraduate and graduate students at our respective post-secondary institutions to contribute to our work. The results were two personas along with task examples that supported both: Alencia, the primary studious student archetype, and Edward, the secondary trying student archetype.

## References

Bahel V, N Tommy, P Himani. (n.d.). P2PLearning Define (Data & Analysis). Google Docs.

### **Appendices**

### Appendix A: Figures

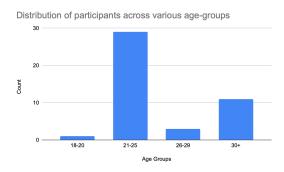


Figure 1: Age Distribution of survey participants

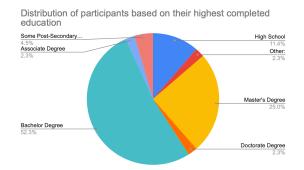


Figure 2a: Highest Completed Education of survey participants

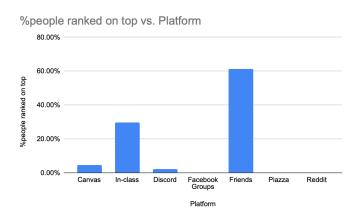


Figure 3: Top ranked peer-matching platform by participants

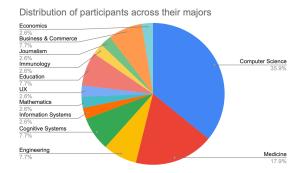


Figure 2b: Major or Program specialites of survey participants whose highest level of education was degree/diploma based

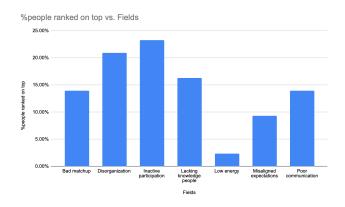


Figure 4: Top ranked reason for RPT failure by participants

Appendix B: Affinity diagram for descriptive answers

B.1: Affinity Diagram Legend

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?

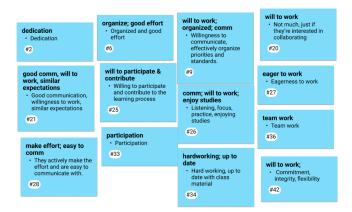
How could technology help you find suitable peers to collaborativ ely learn with? How could technology help you find suitable peers to collaborativ ely learn with?

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

## **WORK ETHICS**

B.2:

#### THEY ARE WILLING PARTICIPATE, CONTRIBUTE, WORK



#### THEY ARE WILLING TO LEARN



#### THEY HAVE GOOD COMMUNICATION

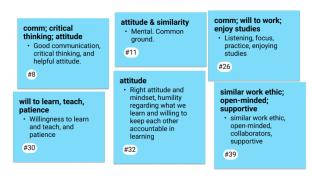


#### THEY ARE ORGANIZED



## **COMPATABILITY**

#### THEY HAVE A GOOD ATTITUDE



#### **WE GET ALONG WELL**



### **WE HAVE SIMILAR GOALS & INTERESTS**





### **OUR TIME ALIGNS**

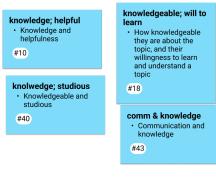


## **KNOWLEDGE**

#### THEY CAN FILL SOME KNOWLEDGE GAP



### THEY ARE KNOWLEDGEABLE



### THEY ARE LEARNING ALONG MY LEVEL



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

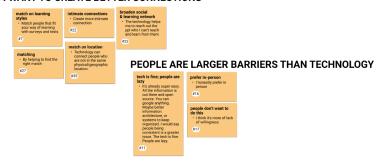
### **PRODUCTIVITY**

#### **PEOPLE**

#### TECH HELPS ME BETTER COMMUNICATE



#### I WANT TO CREATE BETTER CONNECTIONS



#### I WANT TO KEEP TRACK OF OUR TIME



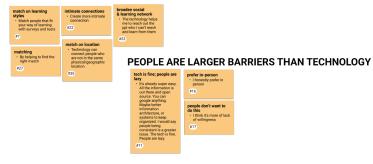
### **PRODUCTIVITY**







#### I WANT TO CREATE BETTER CONNECTIONS



#### I WANT TO KEEP TRACK OF OUR TIME



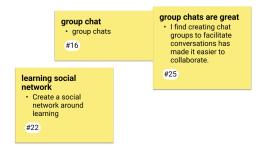
B.4: How could technology help you find suitable peers to collaboratively learn with?

## **MATCHING**



# **LEARNING NETWORK**

### I LIKE GROUP CHATS



### I WANT TO CONNECT THROUGH A NETWORK



### 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

### I WANT PRIVACY BEFORE MEETING PEOPLE



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

### SHARED RESPONSIBILITY

## ORGANIATION

#### imbalanced efforts; freeloaders

I find a chief complaint is that there are inactive group members which increases the work load of students who actually contribute. But eventually the benefits are shared by the entire group which is what probably promotes the inactive behavior.

#25

### people

everyone is committed

#10

#### equal responsibility to avoid freeloaders

· Important that peers share equally or near equally so one person does not take on the burden of teaching or educating while others are benefitting freely.

#5

#### finding good people to work with

 Finding people that are positive, focused, and cooperative.

### prefer committed

It's extremely helpful if

#### need good participants

Need quality participants

#2

#### organization & structure

· Collaborative group learning can benefit from being organized (i.e. having a specific assignment to focus on, or having a set schedule of topics)

#### willing to learn; don't generalize topics

 Learner must be willing to learn and teacher must not over Generalize topics.

#30

#### roles are important

Roles are important. If it is a lab or research paper, having clear roles help facilitate and understand everyone's responsibilities.

#11

### **APP MAY BE USEFUL**

#### app may be helpful

I think it'll be helpful to have this app

#40

### INDEPEDENT STUDY

#### prefer individual study

I do not typically like collaborative group learning and prefer individual study.

#9

#### prefer self study

I generally do not like collaborative group learning, as I find studying myself is more effective

#44

## **HUMAN INTERATION**

· It's important to have collaborative learning to enable people to develop skills to interact with humans outside of the internet

#14

## B.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	