# Cover Page
## COMPSCI 345 / SOFTENG 350 Human-Computer Interaction

## Assignment Two: Low-Fidelity Design

## Group Number: A2G041

## Group Members:

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## YouTube video link: https://youtu.be/BZMca18_OQk

Place this page in the front of your paper prototype envelop and as the first page of your document that you are submitting to Canvas
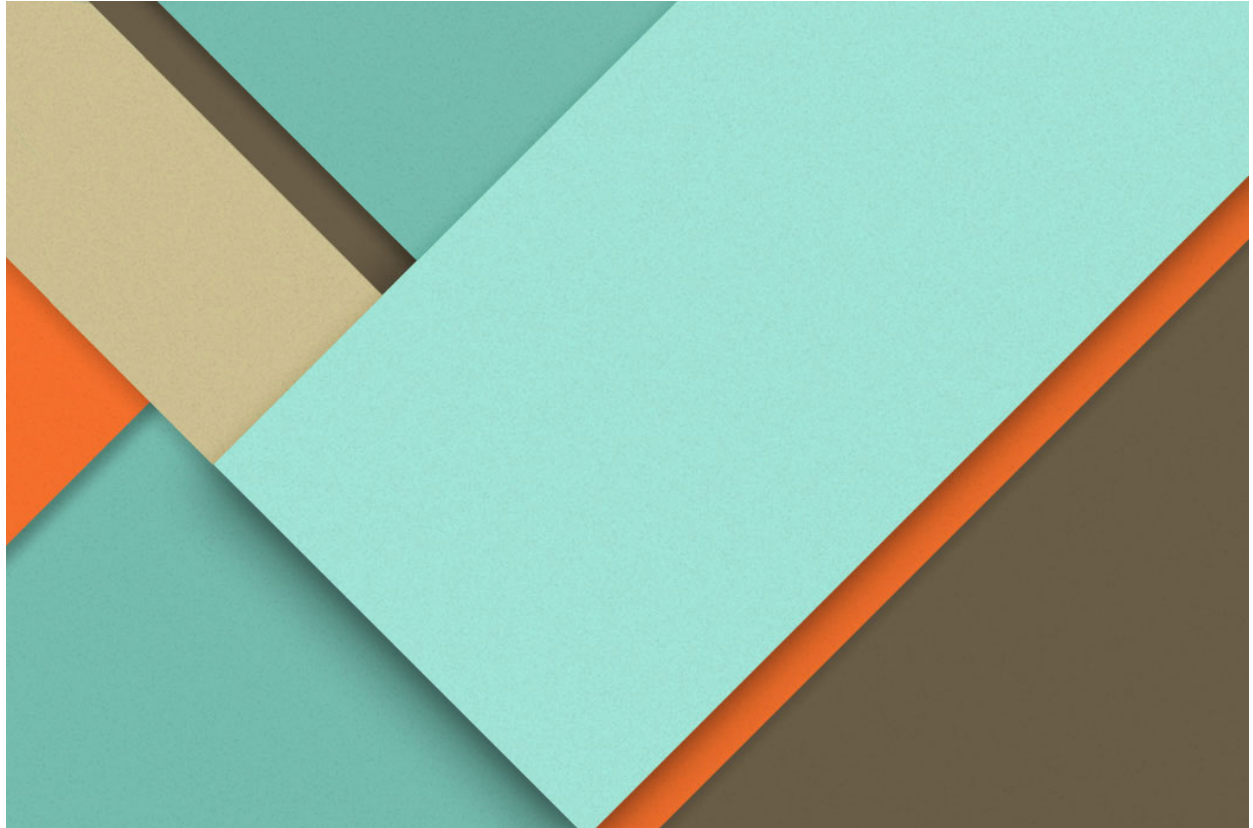
# CS345 A2: Low-Fidelity Design

**Youtube Link:** https://youtu.be/BZMca18_OQk

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Group A2G041

1. Sabaoon Raza Khan
2. Kartika Kemalasari Yuwana
3. Haranin Kaur
4. Daniel Baard

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# Introduction

The website is a problem-based learning environment that supports peer group interaction. Students are assigned to peer groups and given an assignment to complete online. They then set to formulating their initial individual solutions with ongoing feedback from their peers.

The domain and sub-topic chosen for the group assignment are as follows:

- Domain: Physical education
- Sub-topic: Design and justify a weekly training schedule for the school soccer team with the following requirements:
  - Two training sessions per week, keeping in mind official matches are scheduled for the end of the week.
  - Each training session runs for 2 hours.
  - Includes warm-up, strength training, skills training, team coordination and practice.

The website design includes a number of features and functionalities allowing for peer feedback support.

A. By default the user's own problem & solution page is displayed when the user logs into their system. This creates simplicity, so users automatically land on the section of the website most important to them.

   At the very top, the problem is stated, with a user's solution section below it. On the right side of the solution, there is a feedback / discussions panel. Users can view a thread of feedback for their solution from peers. This makes all feedback clearly visible, where peers can then start their own feedback discussions. Along with detailed discussions, the user and peers can also like or upvote any feedback provided.

B. On the user's own solution page, there is a notifications symbol on the top right so they are immediately alerted about new feedback or responses to feedback given.

C. A 'Solutions' panel that allows a user to navigate not only to their own but other peer group members' solution pages as well. They can then view peer solutions and provide feedback to others.

D. A 'Chat' panel where you can have group or private chats with peers in the group. Along with peer names, their online / offline status is also visible, so a user knows if their peers are available to be contacted.

E. When a chat is started, an auto popup chat box with the peer opens up. This allows the user to continue working on the assignment, as well as communicating with the peer, gaining feedback and making changes simultaneously. There is an option for the chat box to be maximised for flexibility of use. Particularly useful when making video calls or sharing screens to discuss assignment work.

F. The assignment submission history link allows users to view their previous submissions, in case they'd like to revert back or see any changes they made. This option is available to a user to only view their own submissions and not their peers.

A few existing websites that inspired our system design were Facebook[1], Slack[2] and Piazza[3].

[1] https://www.facebook.com
[2] https://slack.com
[3] https://piazza.com

# Personas

## Rationale & Research

McKeachie (1999) describes the different types of behaviors that students exhibit in classrooms, including attention-seeking, discussion-dominating, inattentive and unprepared students to name a few. Even so, Veldman & Worsham (1983) identified four syndromes of classroom behavior: good students, outgoing, rebellious, and withdrawn.

Using this research and our own experience as high school students, we categorised the cluster of students in a general classroom based on similar characteristics, goals and needs into: the high achiever, the introvert, and the struggling student.

Using the above to represent our personas, the two visualisations on the next page by Insights (2018) uses NZQA school data gathered for the year 2017.

National data by ethnicity shows 74% Asians, 71% NZ European, and 37% Pasifika Peoples' achieve University Entrance in Year 13. While national data by gender shows 69% of females vs 56% of males achieve University Entrance. These support the following decisions we made, in regards to ethnicity and gender:
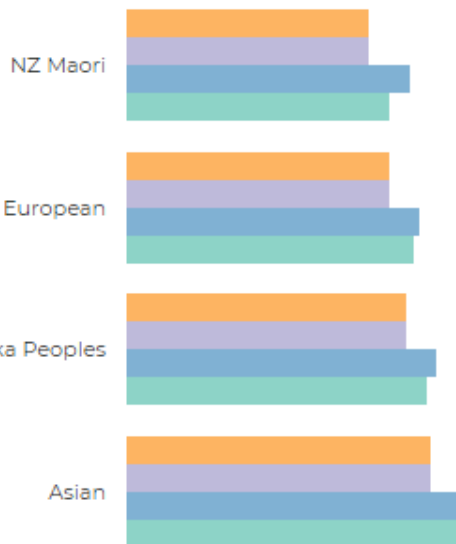
1. The High Achiever - female and of asian ethnicity,
2. The Introvert - a NZ european male,
3. The Struggling student - Pasifika male.

Also, to include both male and female personas, we chose a co-ed school in Auckland to represent where the students study. ACG Senior College has a diverse range of students that study at the school, placed under the higher decile schools in Auckland, which would well represent students of various international backgrounds.
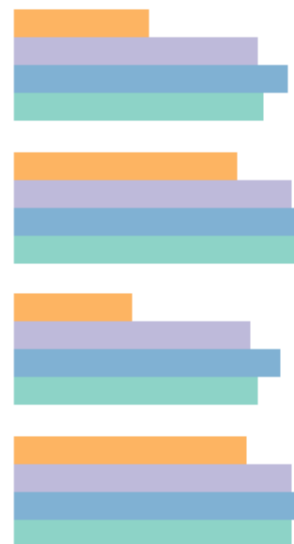
National data by ethnicity ▼

**% of students who attempted the NCEA for their year level**

- Year 13 attempted University Entrance
- Year 13 attempted Level 3
- Year 12 attempted Level 2
- Year 11 attempted Level 1

**% of students who achieved the NCEA for their year level**

- Year 13 achieved University Entrance
- Year 13 achieved Level 3
- Year 12 achieved Level 2
- Year 11 achieved Level 1

NZ Maori

NZ European

Pasifika Peoples

Asian

National data by gender ▼

**% of students who attempted the NCEA for their year level**

- Year 13 attempted University Entrance
- Year 13 attempted Level 3
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- Year 11 attempted Level 1

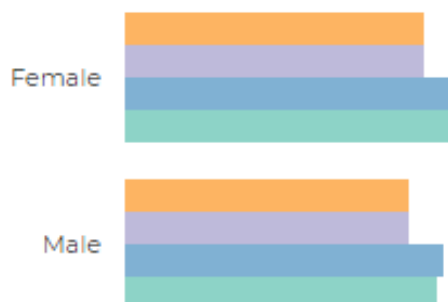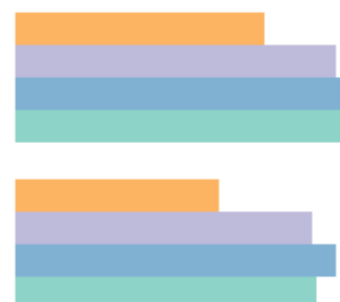**% of students who achieved the NCEA for their year level**

- Year 13 achieved University Entrance
- Year 13 achieved Level 3
- Year 12 achieved Level 2
- Year 11 achieved Level 1

Female

Male

# SOJU LEE
# THE HIGH ACHIEVER

As an international student from China, Soju has been living in New Zealand for the past three years and stays in a homestay in Epsom. Currently in her last year of high school at ACG Senior College, she strives to excel in both studies and extracurricular. Not only is she the Academic Prefect, but takes great initiative to lead, volunteer, and plays for the high school badminton team. Her competitive nature and passion for sports has led to her interest in Physical Education. Actively engaging in discussions and giving peers academic feedback, she loves helping her friends with work at school.

> " I aim to excel in everything I do and help my peers along the way. "

**LOCATION**
Auckland,
New Zealand

**AGE**
18 years old

**FINANCE**
Wealthy

**OCCUPATION**
International
Student

**ETHNICITY**
Chinese

**EDUCATION**
Year 13 - ACG
Senior college

## Site Behaviors

**Approach to Information**
Open — Focused

**Approach to Feedback**
Receive — Give

**Chat Usage**
Hardly — Often

**Frequency of Visit**
Hardly — Often

## Goals & Needs

Soju is a high achiever so her primary goal is to get a high grade and assist others to do so too.

## Tech Confidence

## Tech Usage

"

I just want to get the
assignment done
and get back to the
stuff I enjoy.

"

**LOCATION**
Auckland,
New Zealand

**AGE**
17 years old

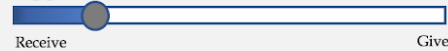**FINANCE**
Middle Class

**OCCUPATION**
Domestic Student

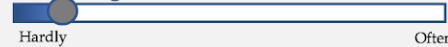**ETHNICITY**
Kiwi

**EDUCATION**
Year 13 - ACG
Senior college

## DAVE SMITH
## THE INTROVERT

Coming from a divorced family, Dave is quiet and enjoys his own company. He lives with his father in an apartment in Newmarket. He doesn't have many friends and spends most of his time off school at home. He likes to play games to escape reality, and as a result he tries to finish his homework quickly in class so he can get home and play games. However, he enjoys getting good results and that's what strives him to do well. He made it into ACG since he was in zone and his grades were good enough. As you might guess of someone who spends most of their time off school at home, he isn't very physically sporty. However, his brother and father are both sporty, and that got him interested in doing a course on physical education. He got his dad to sign him up for it, and his father supports his decision. He wants to do well, but also wants to get back to his gaming. This is the core ideal that determines how he interacts with the website.

## Site Behaviors

**Approach to Information**

Open | Focused

**Approach to Feedback**

Receive | Give

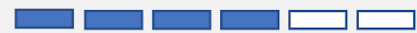**Chat Usage**

Hardly | Often

**Frequency of Visit**

Hardly | Often

## Goals & Needs

Dave is introverted so his primary goal is to get the assignment done without socializing.

## Tech Confidence

## Tech Usage

## LULU TAMATI
## STRUGGLING STUDENT

Lulu wants to be the first in his family to get into university. He comes from a Samoan family and his parents and grandparents were all builders. He goes to lots of family BBQ's and is very close to his extended family. He's an impressive rugby player and managed to get into ACG with a sports scholarship. He's been playing the sport since he was 7 years old He just barely gets passing grades, and struggles academically for the most part. He has a large group of friends and enjoys hanging out with them in his free time. He signed up for this course since he knows he struggles and the peer interaction aspect sounded like it'd help him out a lot. His interest in physical education should not surprise anyone, considering his long history with sports. He hopes to get a good grade in this course to prove to his family that he can do well in university.

"
*I want to change my not achieved grades to achieved but have a hard time understanding concepts in class. I am in desperate need of help with my assignments.*
"

**LOCATION**
Auckland, New Zealand

**AGE**
17 years old

**FINANCE**
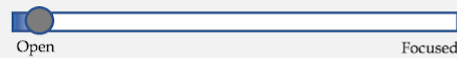Poor

**OCCUPATION**
Domestic Student

**ETHNICITY**
Samoan Kiwi

**EDUCATION**
Year 13 - ACG Senior college

## Site Behaviors

**Approach to Information**

Open — Focused

**Approach to Feedback**

Receive — Give

**Chat Usage**

Hardly — Often

**Frequency of Visit**

Hardly — Often
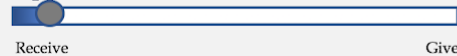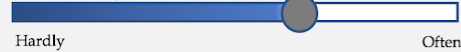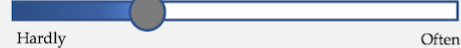
## Goals & Needs

Lulu struggles so his primary goal is to pass the assignment and he needs help to do so.

## Tech Confidence

## Tech Usage

# Scenarios

## Scenario 1

Goal: Wants to get the assignment finished as soon as possible.

**PACT Analysis**

- People: Dave Smith, Anin Kaur
- Activities: Reads feedback, upvote/downvotes feedback, checks others' answers, edits answer, checks submission history, submits the assignment.
- Context: In class
- Technology: Laptop

Dave brings his laptop to school. Since he's in Math class he decides to use it to work on the problem. He wants to get it finished as soon as possible so he can have more time to relax and play games when he gets home. He logs into the website and reads the feedback received on his current answer. He upvotes the ones that helped him out the most. He reads the group chat to see if anything useful has been discussed but it's just people asking for help. He looks at Anin's solution page, since he liked her feedback, to gain some understanding for his own work. He now feels confident editing his answer. But then he messes up and posts without realising he deleted critical information. He looks up his submission history and copies the critical information he deleted from his previous submission. He edits his solution and pastes the information back in. Then he submits it.

## Scenario 2

Goal: Needs help starting on the assignment.

**PACT Analysis**

- People: Lulu Tamati, Soju Lee
- Activities: Starts the assignment, browses through resources, reads other peer members' answers, asks for help in the group chat and private chat without call and/or video call.
- Context: Home environment
- Technology: Shared computer at home

Lulu just finished rugby practice and has driven home. He hasn't started his assignment yet, so logs into the website and has a read through the assignment problem. Since he's unsure of what to do, he browses through available resources and reads through other people's answers. He asks for help in the group chat, sees Soju online and messages her directly. His computer doesn't have a webcam or microphone. Soju proceeds to explain the problem to him and the ways of going through it. They don't have long to talk however, since someone else at his home needs to use the family PC. Lulu lets Soju know he has to go and thanks her for her help. He feels like he understands it a bit more but needs some more help in the future.

## Scenario 3

Goal: Wants to help others with the assignment.

**PACT Analysis**

- People: Soju Lee
- Activities: Checking notifications, giving feedback on another student's answer/feedback, helping other students via video call.
- Context: Home
- Technology: A web browser on a computer or laptop

Soju has worked on her assignment and is willing to help others. She has just gotten home from school and has some time until badminton practice. She logs into the website and checks other students' solutions and leaves feedback on them. Her notification pops up and she sees she's received a reply to one of her feedback. She reads and responds to the feedback. She then checks her direct messages and the group chat. She sees that someone who wants help is online and starts a video call with them. After she is done helping them out, she decides to log off and get ready for badminton practice. Helping others today has helped her understand the problem better herself, and she goes over what she's learned whilst getting ready so she can improve her answer later.

# Visual & Interaction Design

1. Our initial idea for the website was to have the feedback underneath the solution. One problem we found with this, was that the user would have to scroll all the way back up to look at the solution if they're looking at feedback. This is a situation that could easily occur since the feedback is directly related to the solution itself. We also noticed that we had a lot of horizontal space available to us. We decided to have the answer and feedback be side-by-side so the user could simply look between them. Both the solution and the feedback will be scrollable.

2. We intentionally separated people's chat and solutions to reduce the number of clicks users have to make. One option we could've gone with was clicking on the user's name and then choosing between starting a chat with them or looking at their solution. However, this would've meant that users have to click twice instead of once to look at other people's solutions or start a chat with them. We think these are actions a user wants immediate results for. Especially when someone sees the online status circle next to the name, they expect to open a chat when they click on the person's name.

3. To meet one of the key interaction challenges of synchronous chat, we implemented video chat as one of our functionalities. When starting a video call, we'd initially planned for it to open up in a new window as this is the standard seen in websites, for example Facebook and Hangouts. However, we realised that this wouldn't allow users to chat with peers and work on their assignment at the same time. So to enable efficiency, we designed it to open up as a modal in the middle of the screen. It can then be minimised into a smaller modal and dragged around the screen so users can discuss and navigate around the website simultaneously, without having to leave the window.

# References

Donald J. Veldman & Murray Worsham (2014). *Types of Student Classroom Behavior, The Journal of Educational Research, 76*:4, 204-209, DOI: 10.1080/00220671.1983.10885451

Insights. (2018). *NCEA results: See how your school rates.* [online] Available at: http://insights.nzherald.co.nz/article/ncea-table-2018/ [Accessed 22 Apr. 2018].

McKeachie, W. J. (1999). *McKeachie's Teaching Tips: Strategies, Research, and Theory for College and University Teachers.* Boston: Houghton Mifflin Company.