Cover Page

COMPSCI 345 / SOFTENG 350 Human-Computer Interaction

Assignment Two: Low-Fidelity Design

Group Number: A2G046

Group Members:

Name	ID	UPI
Michelle Arthars	564540995	mart923
Luke Canes	392505506	lcan812
Michelle Xie	296372090	mxie220
Zhi Yi See	6579623	zsee930

YouTube video link:

https://www.youtube.com/watch?v=sqwnXa33rIE&feature=youtu.be

Note: To ensure a fair playing field for all students in the class the University of Auckland will not tolerate cheating or assisting others to cheat, and views cheating in coursework as a serious academic offence.

Student Declaration:

- We [the above named students] declare that this work is our own work and reflects our own learning.
- We declare that where work from other sources (including sources on the world-wide web) has been used, it has been properly acknowledged and referenced.
- We understand that our assessed work may be reviewed against electronic source material using computerised detection mechanisms.

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

Introduction

Peer feedback has become one of the most useful tools students have in their disposal. For our domain, we chose the subject of physical education (also commonly referred to as PE). The sub-topic (which is the assignment our personas have to answer using our proposed system ‘Peer Education’) is “How to prevent and recover from common sports injuries”.

Peer Education supports peer feedback by enabling peer groups to comment and give feedback on each member of the peer group’s solutions. We recognised the importance of peer feedback so we included the option for our users to edit their solutions before the submission deadline. This encourages our users to give feedback to one another so they can improve on their solutions before they submit it.

In designing our system, we looked at different platforms including popular social network platforms as well as other similar peer feedback and peer support platforms for educational uses. These included Facebook, Piazza, and Google Docs and Adobe Acrobat Reader. We chose Facebook because our design required a synchronous chat and messaging and Facebook is best practice in designing synchronous chat and messaging. We chose to design of our question and solution boxes closely to Piazza as it follows Nielsen’s heuristics of “Consistency and standards” so users will know how to use our platform immediately based on prior knowledge and familiarity (see figure 1). We chose to follow Google Docs and Adobe Acrobat Reader when designing the requirement of entering feedback commentary as they had best practice in leaving comments and feedback on documents.

Overall, our platform, Peer Education integrates the best practices from various other platforms to create a perfect platform for peer feedback.

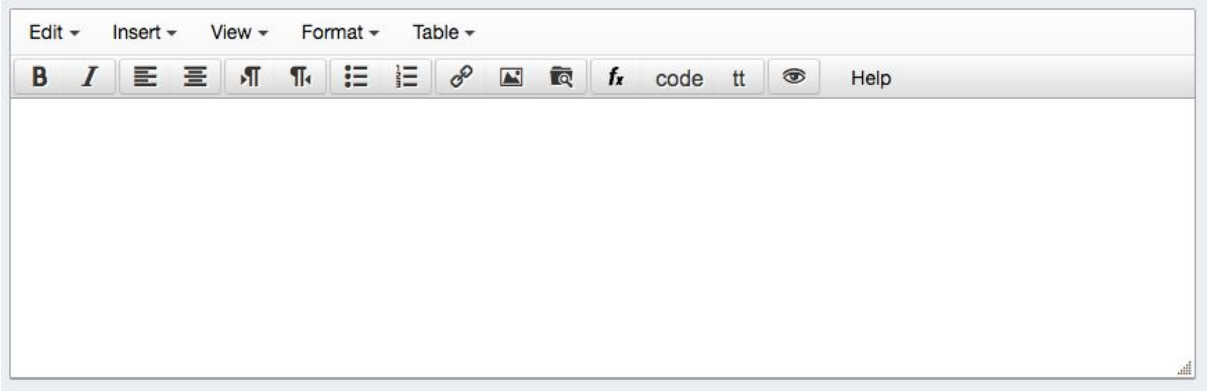

Figure 1. *Post box from Piazza*

Personas

Chris Anderson

"I want to use something that is able to help me excel in my studies. I need to be able to track my progress and see how I compare to the progress made by my classmates."

Age: 18
School: Tawa College, Wellington NZ

Chris is a well-rounded, high-achieving high school student who wants to excel in the subject of physical education. He is very passionate about the subject and wants to pursue a career in physiotherapy. He has done research on the Careers NZ website and found that he needs to take physical education, health, and biology at school to ultimately become a physiotherapist.

He finds that he learns more effectively through group discussions and visual representations. He works well with people and will readily support others when he feels knowledgeable about specific subjects. Simultaneously, he also values constructive feedback from his peers. Often, he approaches his classmates for advice before seeking help from the teacher. He plays for the local football team and currently coaches the junior team in his high school.

Goals:
- To do well academically
- To become a physiotherapist one day
- To run a half marathon by the end of the year
- To top his classes at the end of the year

Learning style:
Visual representation and group discussions

Technology Confidence:

80%

Motivation:
- Be able to enroll into university to study a Bachelor of Health Science next year
- Become a better football coach

Devices owned:

Brands used:

Jayne Wong

"I want to be able to do school work while away at tournaments or training camps. It's always so stressful to have heaps of work to do when I come back. I need something that lets me start my work early."

Age: 18
School: Tawa College, Wellington NZ

Jayne is a competitive volleyball player that wants to use an online system to complete her school work when she is away at inter-school tournaments. Jayne's ultimate goal is to qualify for the national team to represent her country in international tournaments. She believes taking physical education will help her achieve that goal. However, she spends a lot of time training for tournaments and is often absent from class. Due to her busy training schedule, she needs a system that would allow her to work on her assignments outside the classroom.

Jayne needs an efficient way of studying because she does not have a lot of time. She needs to be able to easily identify her weaknesses and make improvements. Her parents have always supported her Volleyball dreams but Jayne also knows they want her to complete high school and she wants to make them proud by the end of the year.

Goals:
- To qualify for the national Volleyball team
- To be able to become a professional Volleyball player and play overseas
- To make significant improvements in her classes

Learning style:
- Practical and auditory leaner that needs regular encouragement and engagement to stay motivated

Technology Confidence:

40%

Motivation:
- To help increase her chances on being selected for the National Volleyball team.
- To get her high school diploma

Devices owned:

Brands used:

Daniel Miller

"I get distracted too easily in class and can't concentrate very well so I'm always falling behind on work. I need to work hard to play hard but I don't know where to start and the teachers don't like me because they think I talk too much."

Age: 18
School: Tawa College, Wellington NZ

Daniel has always been a superstar when it comes to basketball and he aims to get a full scholarship to attend college next year. As a highly popular student, he gets distracted very easily. Due to this, Daniel is often behind on class materials and does poorly in assigned homework and tests.

He wants to be able to play in the NCAA Division I. He knows he needs to achieve a minimum GPA of 2.4 (or equivalent) to get those highly competitive basketball scholarships for the best colleges across the world. Coming from a weak academic background, Daniel wants to use a system to help him understand and keep up with class content. He wants to be able to work on his assignments without distractions but he also needs a collaborative work environment to support him.

Goals:

- To get a full scholarship to attend college that plays in the NCAA Division I for basketball
- To spend less time gaming and on social media
- To pass all his classes

Learning style:

- Learns in a slow, methodological, step by step manner, finds group work useful but gets distracted very easily.

Technology Confidence:

100%

Motivation:

- Needs to get a GPA of at least 2.4 to qualify for fully-funded basketball college scholarship
- To become more knowledgeable
- To be able to leave his hometown at the end of the year

Devices owned:

Brands used:

Scenarios

Scenario 1: ***Reviewing and leaving feedback***
Chris has some free time and decides to check his account for feedback on his posted solution. From the home screen, he observes 3 unseen notifications. The drop down notification list indicates 3 new feedback on his solution. Chris looks at the first feedback by clicking onto the notification. The comment was left behind by Susan, who is usually very critical and opinionated. The notification automatically scrolls through the list of feedback to bring Susan's comment to the top. Chris takes a deep breath and begins to read Susan's feedback. He is surprised to find that Susan's comment was not as harsh as he expected but suggested he make changes to his second paragraph to include more examples. Chris clicks the edit button to refine his solution and resolves the comment. Chris nows wants to see other people's solutions so he navigates to Daniel's solution. He reads through Daniel's solution and decides to leave a feedback for Daniel. Chris clicks on the "Add comment" button and types his feedback for Daniel. He then submits his feedback which is then posted to Daniel's feedback sidebar. Once he sees the feedback has been successfully submitted, Chris then logs out of the system.

Scenario 2: ***Drafting up a solution***
Jayne is driven to a tournament by her mum, the travel time is not sufficient for her to write a complete answer. However, she wants to start working on it. Jayne's mother works at Vodafone and gets a monthly allowance for mobile data so Jayne asks her mother if she could use her mother's monthly data allowance to do her assignment. Her mother says yes. Jayne logs onto the system, and navigates to the problem given, and clicks "Write your answer". Jayne can read the problem on the screen, and writes a solution based on what she discussed with her peers. She is also able to review supporting material that is provided online. Jayne is unsure about something she has discussed with her peers, and sends a message to ask for confirmation. When she is about to reach her destination, Jayne clicks "save as draft", as the answer is not complete. After the tournament, while being driven home, she goes back to her drafted solution, and continues to work on it. Jayne has received a reply to her message, and can confidently work on her solution. When she feels like her answer is complete, she clicks "post".

Scenario 3: ***Using chat messaging to clarify advice***
Daniel knows he needs to improve his solution so he posted his solution as soon as he could in the hope that he can gather feedback from his peers early on. This gives him more time to fix his solutions or make changes to it. Daniel goes home after another basketball training session and logs onto the platform. He gets three notifications indicating that his peers have reviewed his solution. He looks at the first two feedback but his peers are not online. Daniel leaves a response under their feedback for his peers to check later on. The last feedback is from Chris. Chris has suggested to Daniel that he should consider incorporating, "Nordic hamstring exercise" into his answer. Daniel is not entirely sure what this means and would like to ask him for clarification. He sees that Chris is currently online so he opens up a chat box with Chris to start asking him further questions. With Chris's help, Daniel makes changes to his solution, resolves Chris's feedback and updates it for further feedback.

Visual and Interaction Design

Design Challenge 1: ***Difficulty in navigating among solutions***

Since we are designing an educational based platform for students between the age of 11 – 18, we aim to create a system that emphasises simplicity and efficiency. Assuming there are multiple sub questions within the assignment given to the group, the task of navigating between individual solutions can become complex and time consuming if the system is poorly designed. To resolve this issue, we decided to apply Nielsen's Heuristic Evaluation of "Recognition Rather Than Recall" and have a drop-down list containing the member names and their progress for each question. This feature allows the user to navigate to other member solutions simply by clicking their name. Combining the heuristics of "Visibility of System Status" and "Error Prevention", we decided to grey out names to restrain the user from clicking onto individual who has yet posted a solution. Effectively, our aim is to minimise errors and enhance efficiency of the system.

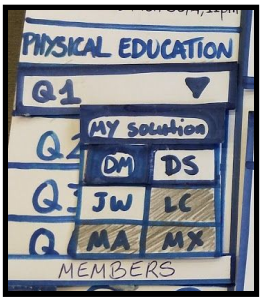

Figure 2. *Solution navigation drop down menu*

Design Challenge 2: ***Showing user's availability for chat***

Giving the user insight on other user's availability for synchronous chat is a challenge we faced. We looked at popular messaging platforms the users are familiar with and implemented their conventions following Nielsen's heuristic of "Consistency and Standards". Therefore, we decided to use a green circle to indicate the online status of an individual and grey for offline. This is the same convention used by most popular messaging platforms, such as Facebook, Discord and Skype. Furthermore, we decided to position the coloured circle close to a circle showing other user's initials just like the Facebook chat to clearly indicate the online status of each individual. By following the conventions used by popular sites, the user can easily apply their previous experience and knowledge. Ultimately, this makes our design more user friendly.

Figure 3. *Members online status box*

Design Challenge 3: ***Reviewing feedback and making amendments to solution***
The key interface of our design is the user process of reviewing peer feedback and amending their solution accordingly. Therefore, it is crucial that we minimise complexity to enable the user to work effectively. To keep the process simple, we designated an area on the right side of the screen for the peer feedback. Ultimately, this allows important information to be displayed on the screen at any one time and enables the users to easily refer back and forth between the feedback and their solution. To further enhance the connection between the feedback and the part of the solution it is referring to, we applied Gestalt principle of proximity. Essentially, we implemented a feature allowing the user to click on a speech bubble and the feedback it is relevant to will move closer, emphasising their connection and help the user in the process of refining their solution.

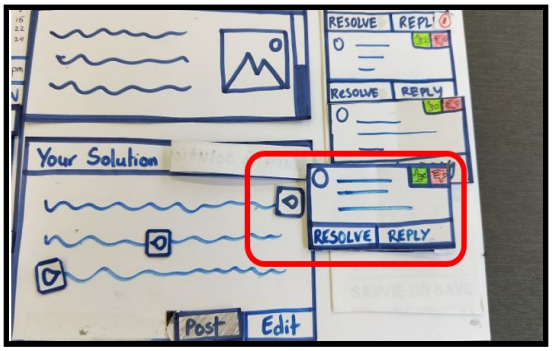

Figure 4. *Relationship between feedback and its associated comment icon*

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