7 DESIGN ACTIVITIES

7.1 OVERVIEW

This section covers the team's design process to date which includes initial ideation, task flow diagrams, mock-ups and three rounds of annotated prototyping. Analysis of user evaluations will also be conducted in this section of the report.

7.2 INITIAL IDEATION

Having finalised initial research, and formalised a conceptual model, the ideation process began for team Go Fish. The team individually came up with ideas that addressed the problem space. Thus, the initial ideation process was evaluating the quality of the ideas, and choosing the strongest candidate for further development. (see Appendix 11.2)

It was decided that a PUGH matrix would be most efficient in deciding which idea to pursue. This matrix can be seen below:

CRITERIA	CONCEPTS							
	Conversation Simulator	Storybook	Mood API (Chrome Extension)	Social Media Emotional Intelligence	Artemis	Social Media Common Interests	My Meltdown Manager	Emotional Picto-chat
Addresses Social Isolation (x3)	0	2	-1	1	-1	2	-2	1
Simple (x1)	0	0	3	0	-1	0	1	0
Non-confrontational (x1)	0	0	2	0	2	-1	2	0
Accessible (Physical Considerations) (x1)	0	0	1	0	0	0	1	1
Progressive/ Iterative Approach (x2)	0	2	-2	0	-1	0	-1	0
Facilitates growth of transferable social skills (x3)	0	1	-1	0	0	1	-1	0
Technically Feasible (x1)	0	2	2	1	-1	1	2	0
Innovative (x2)	0	2	2	1	2	-1	1	1
Targets Emotional Intelligence/Understanding (x2)	0	1	1	1	-1	0	0	1
Collaborative (x2)	0	2	-2	2	-1	1	-2	1
TOTALS:	0	24	0	12	-5	8	-7	10

Figure 7.2.1: *Pugh Matrix for initial concept ideation*

This method allowed for the team to make a collective decision regarding the most promising concept when compared against a set of weighted criteria. From this matrix, it can be seen that the story book had the highest overall score and, as such, the team chose this concept for further development. Having named this *Fableous*, more work was done for the conceptual solution and further refinement commenced.

7.3   TASK FLOW DIAGRAM

Below is a revised task flow diagram of the core interaction pathways for the ideal final interactive pathways of *Fableous*. The user starts by completing tutorial-like tasks where they progressively unlock features which are required to complete the next step. First, the user completes the background artist introduction, then the character artist, then the author introduction. The user will then be able to complete a whole page then, in turn, a whole three-page story. It should be noted that all of the previous tasks are completed individually. Next, the user unlocks 'collaborative mode'. Users are first assigned an emotive theme to work under and then are asked to start planning out their three-page story in a pair. The pair set out planning and developing their story on a page by page rotational basis where the roles of background artist, character artist and author swap after each page. If working in pairs, the remaining role should be automated by *Fableous*. Once users are comfortable working in pairs, their team size increases by one and then they repeat the story creation process. This aims to promote and engaging and collaborative environment where all users are contributing equitably. Further, this interaction flow aims to progressively introduce the user to potentially overwhelming situations and slowly build confidence and competence in social skills.
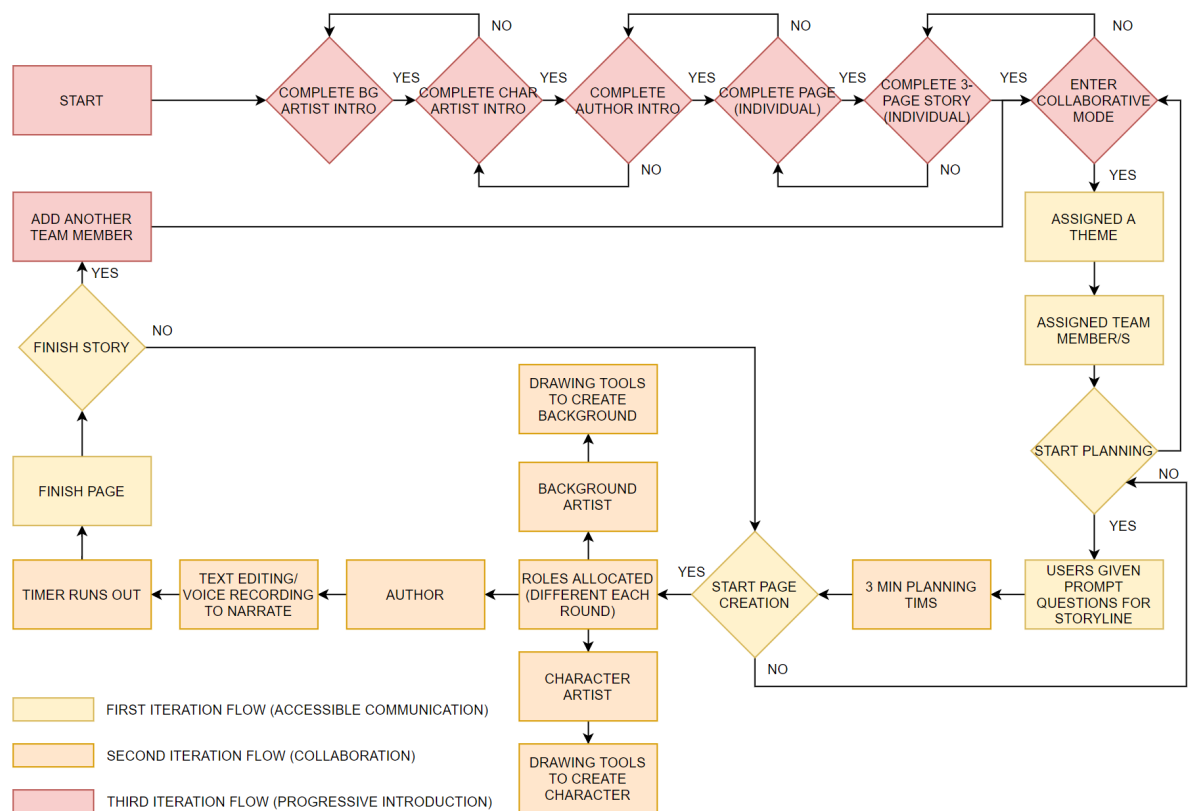

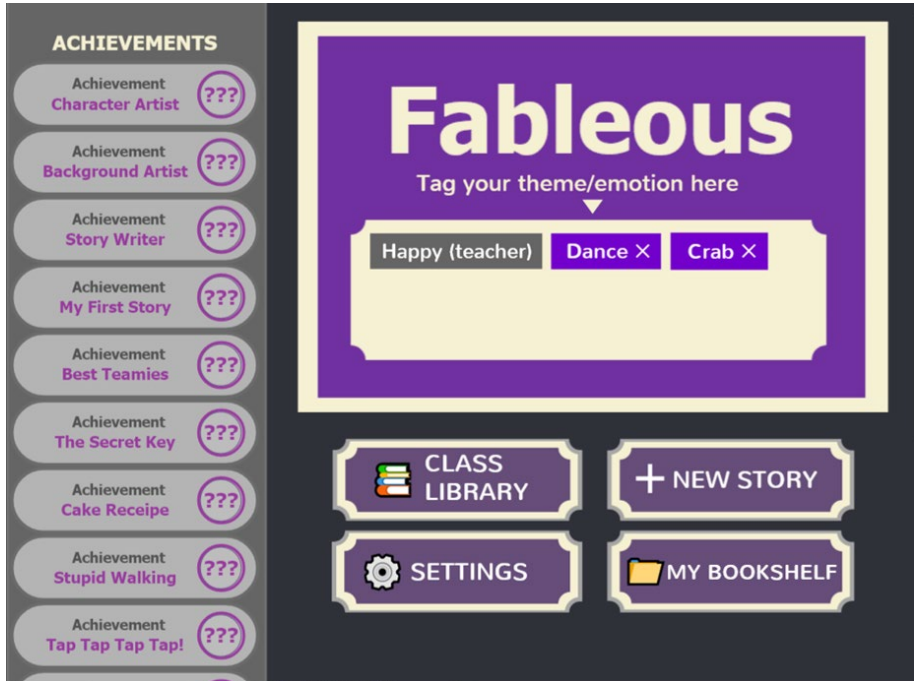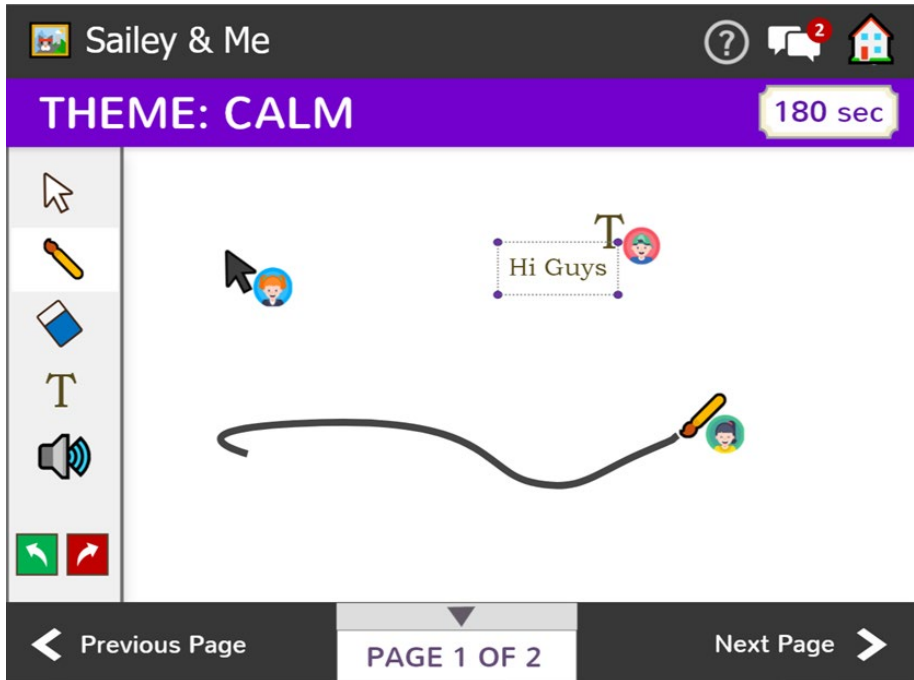*Figure 7.3.1: Fableous revised task flow diagram*

7.4 FEATURES

The team ideated for system requirements that the conceptual design should be able to uphold (See Section 5.3.3). These criteria are: promotes creative expression, accessible in nature, community building, progressive introductory approach, motivating, facilitates collaboration, fosters transferable social skills. The relevant functionality with conformance to the team's system requirements are detailed below:

FEATURE	CRITERIA	DESCRIPTION
Drawing (draw, colour, erase)	Creative expression Fosters transferable social skills	Users are able to draw pictures to tell a story. The drawings will act as the artistic interpretation and a form of self-expression for the users.
Create a story	Progressive Introduction Collaboration Fosters transferable social skills	Users will start by writing/drawing their own storybook. Once they are comfortable with this process, they will move onto working in pairs to produce a storybook. Next, the users will be required to work in a small team. This acts as a progressive transitional approach to help users acquire active communication, collaboration and teamwork skills in a comfortable setting.
Audio/ Speech	Accessible	Instead of reading/ writing the storyline underneath the artwork produced, the user will have the option to add an audio recording.
Sharing Stories (Gallery)	Collaboration Community Building Motivating	When users have finished creating a story, they will have the option to share the story with their community through a gallery. All stories will be displayed in this gallery and users can read, comment and like these stories.
Minimalistic UI (Interface Design)	Accessible	The interface design will aim to facilitate a simple, navigable and familiar user experience. The system will utilise common interaction modes that drawing applications and social media platforms utilise while keeping in mind the more niche accessibility requirements individuals with ASD have.

Story Themes	Facilitates transferable social skills Motivating	Users will be required to write a story under a given theme/emotion. This provides an opportunity for users to gain further insight into their own emotional responses to situations and compare this to their teammates. This aims to help improve emotional awareness and social skills which can be transferred into other usage situations.
'Page-by-page role' Approach	Progressive Introduction Collaboration Facilitates transferable social skills	When in 'team' mode, a team of 3 users will have to work together to create a story. However, in order to avoid users taking control and to promote equitable contributions, the story will be created in a 'page-by-page' approach within a time limit. Where for each page one teammate will be responsible for a role in a page (Writer, Character artist or Background artist), after around 5 minutes the team will have to move to the next page, be assigned new roles and pick up where the last user left off. In order to achieve the team's collective vision for the story, all team members will need to actively collaborate and communicate with each other.
Report Inappropriate Behaviour	Accessible	If users come across inappropriate usages of the system, they have the option to report the behaviour (such as bullying, imagery). This behaviour will then be flagged and a system monitor (teacher) will be notified. This provides a non-confrontational way of conflict resolution.
Achievements	Motivating Progressive Introduction	Users 'unlock' achievements as the continue to interact with *Fableous.* This aims to motivate the users to continue with frequent usage and subsequently maximises the potential to develop their social skills and confidence. Additionally, the achievements stand as a tool to control the progressive introduction and make sure that the user is progressing through the system's features and functionality at a rate they are comfortable with.

These features are visualised in the first iteration prototype to test the concept of Fableous. The following are the finalised main pages based on the above features, more pages can be found in Appendix 7.

PAGE	NAME
	Start Page (with achievements)
	Draw Page (In use by all three users)

Tutorial Example Page
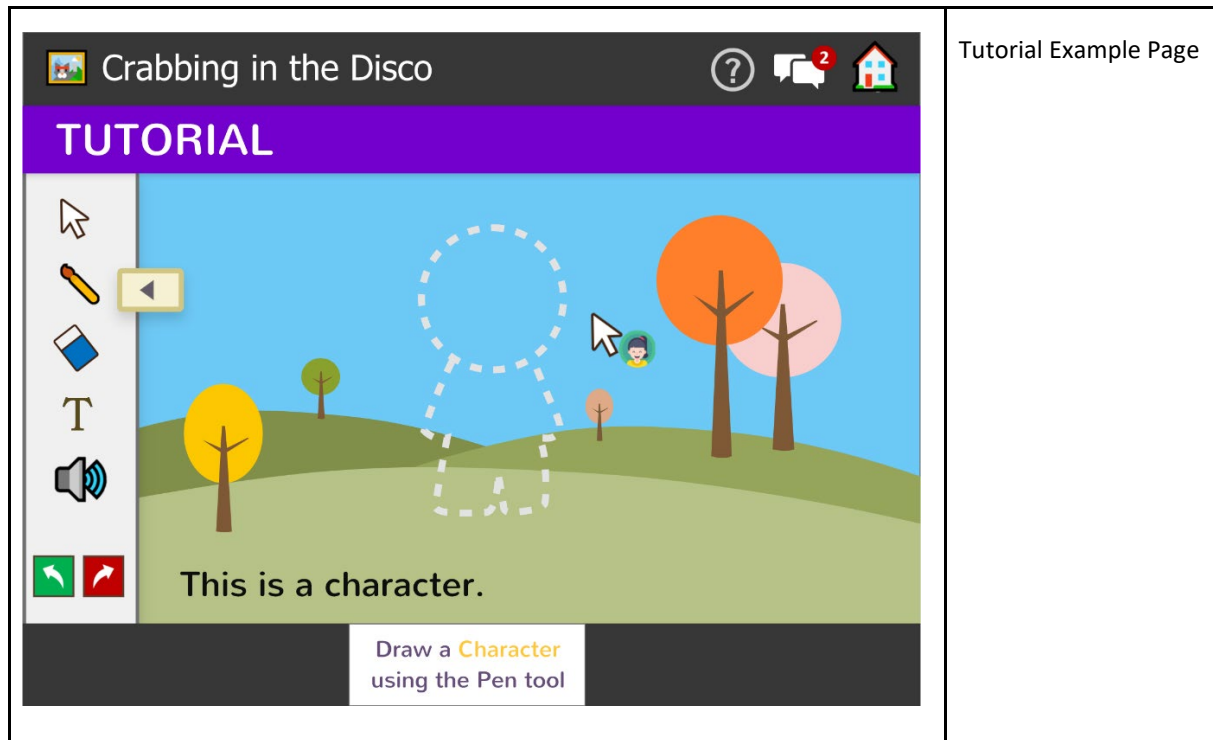
7.5 FIRST ITERATION

7.5.1 GOAL

The first formal testing round was conducted with the intention of gauging the usability of the design and how *Fableous* stands as a digital solution to mitigate the risk of social isolation for primary school students with ASD. It covers the yellow tasks of the task flow diagram in Section 7.3. The presentation for this first round of prototyping can be found here.
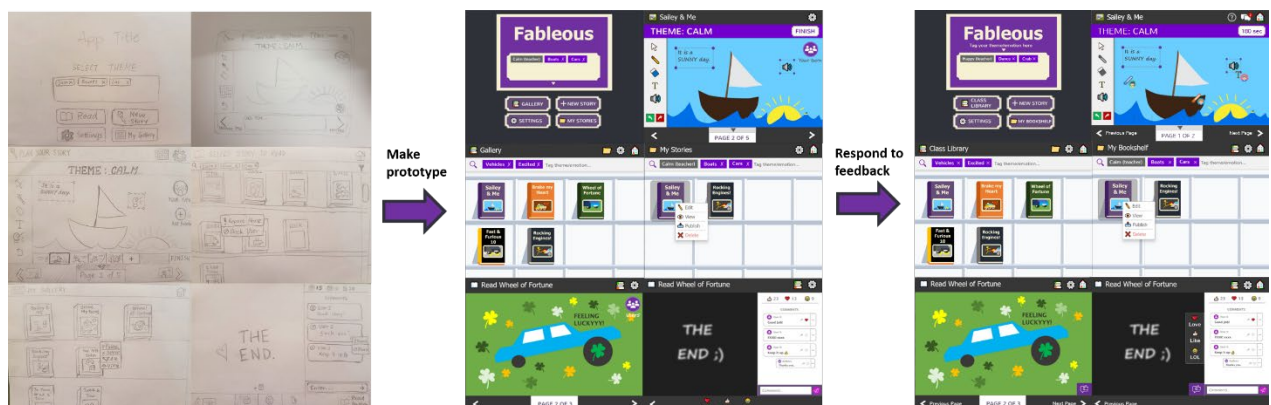
7.5.2 PROTOTYPE

Figure 7.5.2.1: Development process and first iteration of Fableous prototype

Once the task flow of the first iteration was established, the team generated a storyboard to solidify a collective understanding of the User Interface and related functionality. The User Interface comprised six main screens: home; draw; read; my gallery; public gallery and feedback. The team believed this most accurately reflected the conceptual design and testing goal and include the justification in Section 7.8. We went forward with this design to develop a

higher fidelity prototype to improve virtual user evaluations. The first prototype can be found here and the iterated prototype here.

7.5.3 USER TESTING

The team ideated for a list of set tasks which were to be completed by the evaluators with the prototype and subsequent interview questions after the formal interaction period in Appendix 3. Once this interaction period had concluded, the six evaluators were asked to complete a Technology Assessment Model (TAM). The raw results from the observations and interviews can be found in Appendix 4 and Appendix 5 respectively.

7.5.4 TREND ANALYSIS

Indeed, these expert users were often able to identify potential design traps and usability issues as they were interacting with the medium fidelity prototype. General positive feedback revolved around the categorisation of stories under emotive themes, allowing users to pick their own themes, the creative and self-expressive element of storytelling and non-confrontational approach to communication. As a result of these positive responses, the team aims to carry through these design decisions into progressively higher fidelity prototypes.

However, the team did receive feedback highlighting certain usability issues of the prototype (see Appendix 4). Recurring trends are as follows: certain labels and navigational elements appeared ambiguous, peer feedback seems detached from the overall design and there was no obvious focus on group work and collaboration. As the team hoped to design for an easily navigable system which promotes active communication, critique and collaboration amongst users, there is an apparent need to iterate on these components of the prototype.

Next, evaluators were asked to complete a Technology Assessment Model (TAM). This model is used to gauge the usability of a system pertinent to a predefined problem space. In relation to *Fableous*, the team was testing to determine the level of collaboration and socialisation facilitated. Below in Figure 6.5.1 a graphical depiction of the average and distributed responses for each question can be seen in figures 6.5.1 and 6.5.2:
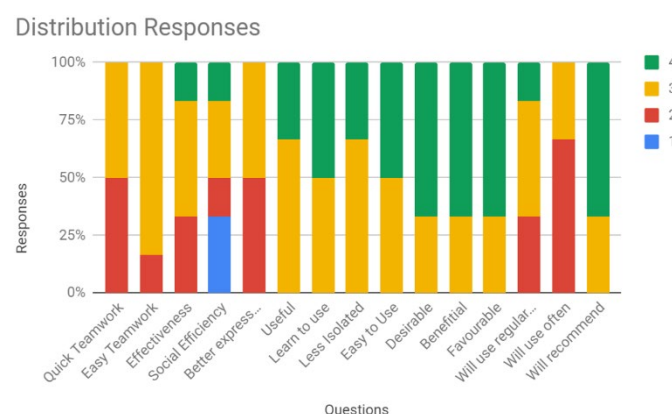

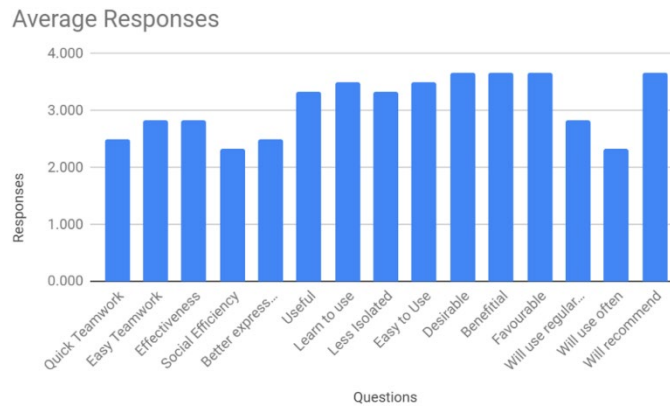*FIGURE 7.5.4.1: Distribution of TAM results per category*

FIGURE 7.5.4.1: Average score of TAM results per category

From the TAM questionnaire, the average usability score that *Fableous* received was 2.9 out of a 4 point scale ((1)strongly disagree, (2) disagree, (3) agree, (4) strongly agree) , which is moderately high. However, certain scores were cause for concern. The shortcomings in design are detailed below:

- "Will use Often" score = 2.3. Approximately 70% of evaluators scores *Fableous* a 2 out of 4. This is an important trend as, from research, existing solutions like Japanese Youth Support Plazas and Newstart all focus on long-term treatments. This is seen to be one of the most effective approaches of overcoming social isolation. This means the team should modify designs to adopt a more progressive and motivating design. This improvement has been noted in the report's System Concept. The team decided that the ASD student will draw the story individually first, then work with 2-3 close peers in the class to get comfortable with socializing, and lastly engage with the large groups. The next prototype developed should test this approach.

- "Social Efficiency" score = 2.3. Though distribution of scores highlight a 50-50 split of positive and negative responses, around 30% of evaluators scored *Fableous* a 1 out of 4 for its capacity to assist in social efficiency. The trend is alarming as the majority of ASD people lack confidence in social skills and this is fundamental to the team's problem space. Thus, further iteration on the concept will need to occur. Through analysing results from user testing, it could be determined that a hindrance to social efficiency could be attributed to the Report/Block feature of the prototype. Tutors commented that some ASD and non-ASD students may overuse it due to misinterpreting each other's behaviours. This team's research supported this critique as findings suggest that individuals with ASD often have Avoidant personality disorder. This disorder leads to a negative overreaction to confrontation and criticism (See Section 2.0). Therefore, it can be concluded that the team should target and facilitate social understanding and conflict resolution in *Fableous'* design. Furthermore, one user who has Asperger's syndrome reported that, even though cyberbullying is prevented in the app, student bullying will still happen outside the class. Thus, it should be used only under teachers' supervision to make sure all students can use it safely.

- <u>"Better self-expression and working with others" score = 2.5.</u> This can be explained by the team's research (See Section 2.0). Individuals with ASD tend to have Agoraphobia. As a result, they do not feel safe in expressing their thoughts and emotions when they are expected to compromise with other classmates on story plots and design. Without a personal space to escape and recharge from socializing, these individuals discourage themselves from self-expression and socialisation. In response to this usability issue of *Fableous*, the team has suggested the system facilitating an individual mode and collaborative mode of storytelling. This allows ASD students to take the time to mentally prepare before actively engaging with more people in the class. Going forward, the team should evaluate the effectiveness of this progressive approach to socialisation in successive prototypes.

7.6   SECOND ITERATION

7.6.1 GOAL

In the second testing round, the team aimed to evaluate user's collaboration experience addressing the "collaborative mode of storytelling" suggested in the first testing round. It covers the orange tasks of the task flow diagram in Section 7.3. The presentation for the second round of prototyping can be found here. In this second round the team also conducted a Community Survey which is discussed in Section 3.4. This survey guided our design direction pertinent to effective collaborative techniques and effective educational approaches for the ASD community.

7.6.2 PROTOTYPE

Since the team's previous prototype was not able to reflect *Fableous'* function of collaborative/synchronous drawing, an online drawing platform called Aggie.io was used for this testing round. It was the collaborative approach of layers and assigned roles that was being evaluated by the team, not the user interface supplied by this third-party software.

7.6.3 USER TESTING

Another testing plan was generated to facilitate this collaborative testing purpose (see Appendix 8). Within a test session, a small group of 2-3 participants were given separate tablet devices to create a three-page story based on the theme assigned by the test facilitator. The group were then asked what conflict and decisions have they made together in the process. After the formal interaction session, the teams were asked to evaluate the usability of this collaboration experience by completing a TAM questionnaire.

7.6.4 TREND ANALYSIS

The team has gathered and attached users' feedback in the report in Appendix 9. Overall, the evaluators were able to create three pages with comprehensible visuals according to the given theme in a span of three minutes. When their roles were assigned, all users were able to stay in their designated roles to complete the task. All users strongly agree that students will engage in the group task by helping each other to understanding their common goal or requirements, and generate a story together. Some users also commented that the common goal of

storytelling is light-hearted and novel concept. This allows ASD students to have a common topic to talk about with their neurotypical peers. However, students may take this as an opportunity to go off task. Further, most users thought that the time limit should be longer than 3 minutes in order to create more meaningful and detailed stories.
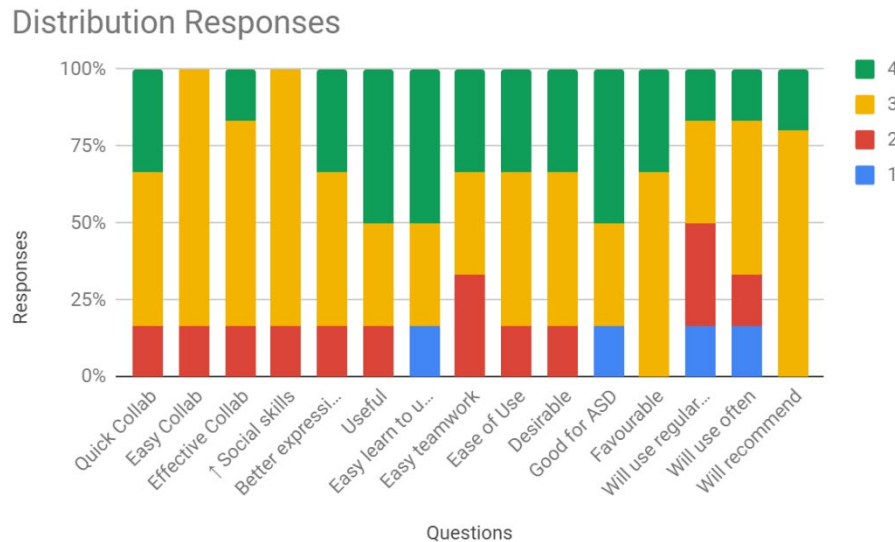

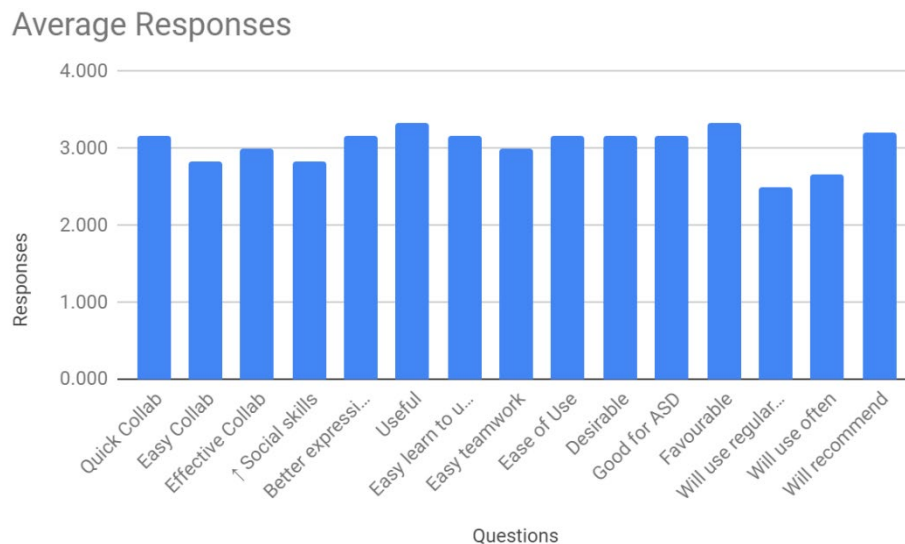*Figure 7.6.4.1: Distribution of TAM results per category*

Figure 7.6.4.2: Distribution of TAM results per category

From the second round's TAM questionnaire, the average usability score that *Fableous* received was 2.8. This has decreased since the initial prototyping round by 0.1. As with the previous round, there were a few scores which were concerning. These are detailed below:

- "Will use regularly" score = 2.4. Approximately 50% of evaluators scores *Fableous* a 1 or 2 out of 4. This category has improved by 0.1 since the initial prototyping round. However, there is still a need for the design to be more engaging so as to promote regular usage. Gamification elements such as achievements should be brought in as an incentive in subsequent design proposals. The next prototype developed should test this approach.

- "Team work efficiency" score = 3. Though distribution of scores highlight a 60-40 split of positive and negative responses, around 30% of evaluators scored *Fableous* a 2 out of 4 for its capacity to assist in team work efficiency. The trend is alarming as the majority of ASD people lack confidence in collaborative skills and this is fundamental to the team's problem space. Thus, further iteration on the concept will need to occur. Through analysing results from user testing, it could be determined that a hindrance to team work efficiency could be attributed to the short time allocated to completing a task. This may have conditioned the users to pay more attention to the impeding deadline over working effectively together. Therefore, it can be concluded that the team should target and facilitate a more relaxed yet incentivised environment for teamwork.

- "Will often use" score = 2.6. This is indicative of a lack of motivating and incentivising features facilitated by the system. Research suggests that, in order to see any long-term positive benefits for collaboration and social skills, prolonged exposure to therapeutic or targeted systems is required. Thus, it is fundamental that *Fableous* stands to entice the user and subsequently encourage continual use. In order to achieve this, the team will need to research incentivising tactics such as gamification and reward-based systems.

7.7 THIRD ITERATION

7.7.1 GOAL

In the third testing round, the team aimed to identify effectiveness of a "progressive introductive approach". This was suggested in the second iteration to enhance *Fableous* as a long-term solution for alleviating social isolation of ASD individuals. It covers the red tasks of the task flow diagram in Section 7.3. The final presentation for *Fableous* can be found here.
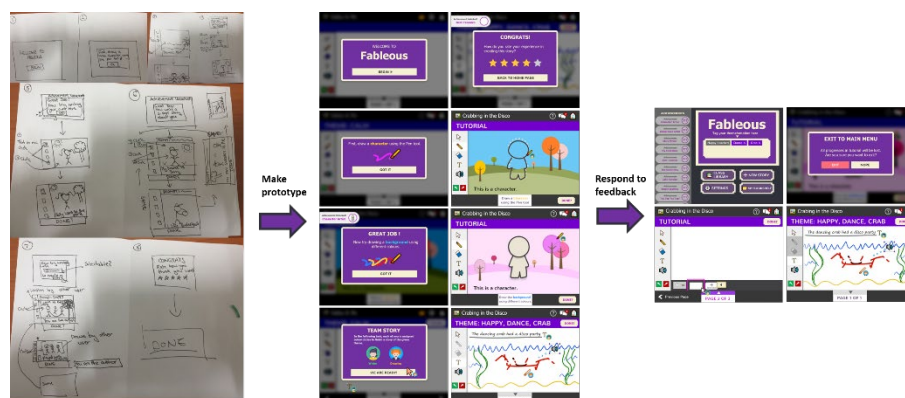
7.7.2 PROTOTYPE

Figure 7.7.2.1: Development process of third iteration of Fableous prototype

Another Adobe XD prototype is developed to portray the 5-step tutorial process, the 5-steps are: drawing as a Character Artist, drawing as a Background Artist, annotating as a Story Writer, draw a 3-page self-introductory story, and create story with a peer according to the assigned role (with the peer being simulated as collaboration was tested in the previous round). The link to the iterated prototype is [here](#).

7.7.3 USER TESTING

A testing plan was generated to elicit user's opinion on the progressive steps in the tutorial (see Appendix 8). Within a testing session, participant was given the prototype to finish a 5-step tutorial of how to draw as 3 different roles required for story creation: Character artist, Background artist and Story Writer. The participants were observed, asked for the feedback relevant to the tutorial processes usability, and finally asked to rate the effectiveness of progressive approach. After the formal interaction session, the participants were asked to evaluate the usability of this introductory experience by completing a TAM questionnaire.

7.7.4 TREND ANALYSIS

Overall, positive feedback was received. The team has noted trends relating to the simplicity of the tutorial which is a result of adopting a step-by-step instruction approach which uses arrows and tutorial dialogues. Most evaluators felt confident in using the app to create story with peers after the tutorial. The main issues users identified are the insufficient guide on features aside of drawing on the canvas. This caused some confusion during the testing sessions. A clearer step-by-step guidance is needed on features such as Add Pages, Navigating through pages, Page View and Group Chat. Considering *Fableous* is assumed to be used in a class activity, students' confusions could also be resolved by teachers.

Some users did not recognize the existence or relevance of the achievements which underpinned the progressive approach. In response to this, a 'trophy-case' listing all user's achievements will be added to the landing page of the app.
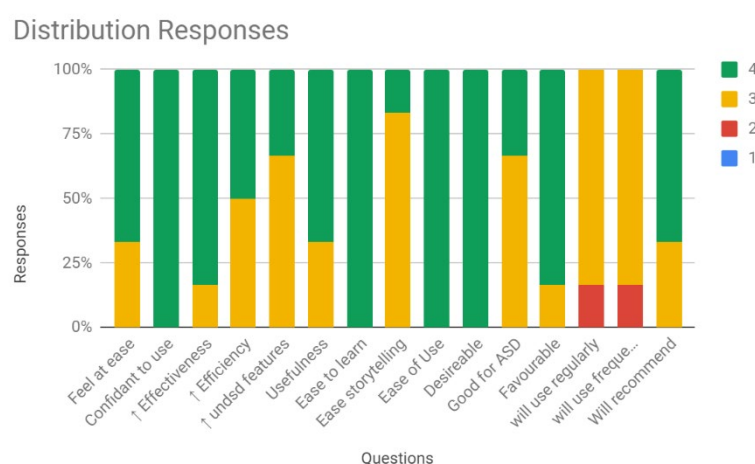

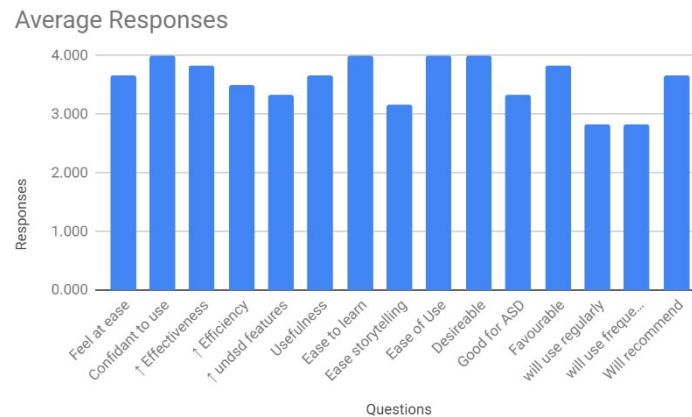*Figure 7.4.4.1: Distribution of TAM results per category*

Figure 7.4.4.2: Average of TAM results per category

It can be concluded from the TAM questionnaire that the average usability score that *Fableous* received was 3.1. This is an increase of 0.3 since the second round of prototyping which reflects positively on the progress made to date. Nevertheless, there are still two categories which require further attention. These are detailed below:

- "Will use regularly" score = 2.83. It should first be noted that this is an increase of 0.43 since the previous round. This is promising for the iteration that has been conducted upon *Fableous* to date. However, it would be ideal for this criterion to be in the 3.0 + range as regularity and persistence is seen to be one of the most effective approaches of overcoming social isolation. This means the team should modify designs to adopt a more motivating design. Verbal user feedback highlighted the apparent detachment of the achievements from the functionality of the system. Hence, iteration on this gamification element may elicit more engagement over a prolonged period of time. Future prototyping should be conducted to test this approach.

- "Will often use" score = 2.83. Again, this criterion has seen an improvement of 0.43 since the second prototyping round. However, it remains as one of the lowest scoring categories. This reflects a lack of immediate incentivising features facilitated by the system. Research suggests that frequent and continual therapeutic approaches prove to be beneficial for the ASD community. Thus, it is fundamental that *Fableous* stands to motivate the user and subsequently encourage often usage. As with the previous criterion, further research and prototyping of gamification elements would benefit the design in this capacity.

7.8   RESPONSE TO FEEDBACK

It should be noted that the team has recognised a need for iteration on the conceptual design in order to promote active and continued engagement with *Fableous*. Hence, a need for motivating incentives could be explored in order to facilitate a more enjoyable and beneficial user experience. Gamification could be further explored and challenges or more obvious 're-wards' could be progressively integrated into the system's conceptual model. However, it is left to the build team regarding where this design direction is taken. With respect given to the
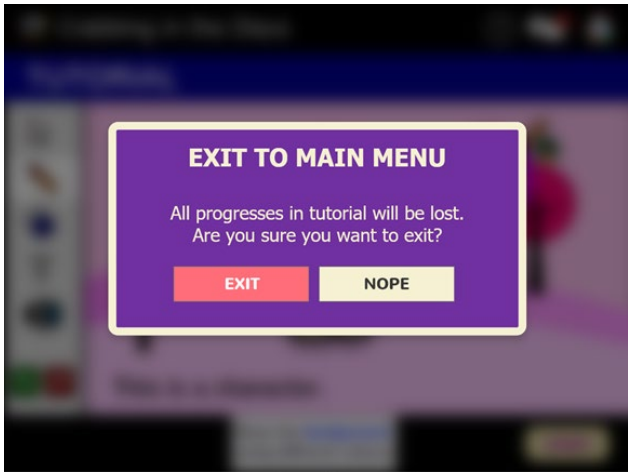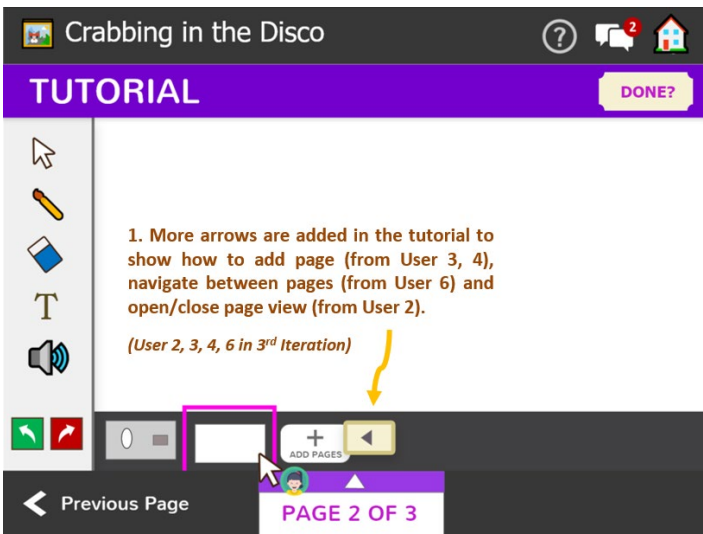
usability issues identified in Section 7.5, the team has iterated on minor elements of the conceptual design. Such iterations include clearer labelling and alterations to the system's navigational elements. Below are screenshots of the medium fidelity prototype with relevant annotations detailing functionality and improvements. Black-and-white wireframes have been used to make the colours of labels more visible. Below is a key relevant to the feedback and features of the prototype:

PAGE	DETAILS
Legend showing: green = From Conceptual Model, orange = From User/tutor Feedback, purple = Basic features	Legend used for categorising changes
Updates to Start Page annotated wireframes	Updates to Start Page
Updates to Draw Page annotated wireframes	Updates to Draw Page
Updates to Group Chat Page annotated wireframes	Updates to Group Chat Page

	Updates to My Stories Page
	Updates to Public Gallery Page
	Updates to Read Story Page

	Exit to Menu window will pop-up when user clicks the Home button
	Update to individual story pages
	Update to collaboration tutorial pages

7.9   SUMMARY

This section of the report has detailed the process the team undertook to develop and evaluate and propose the final design of *Fableous.* The development of a task flow diagram, system requirements, and the three rounds of prototyping and respective evaluations has formed the foundations of the proposed design. The main findings pertinent to the proposed solution relate to accessible design, build communication capabilities and progressively introducing the user to confronting environments such as collaboration. This final round of prototyping was able to conform to most evaluator's predetermined mental models and stood as an effective prototype to be evaluated given the current social distancing regulations. The team was then able to identify usability issues of the design and ideate for potential iterations that could make for a more suitable design. The iterative potential has been detailed in Section 7.8, however, the future direction of *Fableous* is left to the build team.

11 APPENDICES

11.1 APPENDIX 1 – PUGH MATRIX RESULTS

As shown, this is how we chose to persue the storybook idea further that would eventually become *Fableous*.

		CONCEPTS							
		Conversation Simulator	Storybook	Mood API (Chrome Extension)	Social Media Emotional Intelligence	Artemis	Social Media Common Interests	My Meltdown Manager	Emotional Picto-chat
CRITERIA	Addresses Social Isolation (x3)	0	2	-1	1	-1	2	-2	1
	Simple (x1)	0	0	3	0	-1	0	1	0
	Non-confrontational (x1)	0	0	2	0	2	-1	2	0
	Accessible (Physical Considerations) (x1)	0	0	1	0	0	0	1	1
	Progressive/ Iterative Approach (x2)	0	2	-2	0	-1	0	-1	0
	Facilitates growth of transferable social skills (x3)	0	1	-1	0	0	1	-1	0
	Technically Feasible (x1)	0	2	2	1	-1	1	2	0
	Innovative (x2)	0	2	2	1	2	-1	1	1
	Targets Emotional Intelligence/Understanding (x2)	0	1	1	1	-1	0	0	1
	Collaborative (x2)	0	2	-2	2	-1	1	-2	1
	TOTALS:	**0**	**24**	**0**	**12**	**-5**	**8**	**-7**	**10**

11.2 APPENDIX 2 – INTIAL IDEATIONS

Name	Description
Conversation Simulator	This concept aimed to facilitate conversation with users through a non-confrontive and supportive AI interface. This would, in turn, teach users conversational skills and progressively develop their lexicon so as to be able to confidently converse with neurotypical individuals.
Story Book	This was inspired by an activity used by a special education teacher. Each student may work individually or in groups to create a simple children's story book. The books could then be published by the authors so other users may comment on them. The idea is to slowly integrate ASD with mainstream students while also build social confidence/skills through peer collaboration.
Mood API Extension	Implemented as a Chrome Extension. Each sentence in a html page will be ran against a Mood API, and an emoji will be placed at the end of the sentence based on the mood. Makes social communication much easier.
Social Media Emotional Intelligence	This concept stood as a reimagination of conventional social media platforms. As such, emotional indicators in the form of emojis would be displayed next to posts so as to display the intended emotion from the poster as they typed. This aimed to make tone more obvious for ASD users.
Artemis	Many individuals with ASD struggle with conversation, often meaning they are misunderstood. Artemis is an emotionally responsive robot that assists children affected with ASD in English and speech therapy. Artemis does this through playing word activities such as word memorization and hangman.
Social Media Common Interests	Since one of the struggles of ASD individual is that they have specific hobbies and interests that other people may not understand. Therefore, there could be a social platform where ASD individuals are motivated to socially interact from finding other ASD individuals with common interests.
My Meltdown Manager	This stood as an all-encompassing managerial tool for the sensory overloads faced by the ASD community. Such features would include breathing exercises, distractive games, emergency contacts, music and other preventative techniques for the user to have in one convenient location
Emotional Picto-Chat	This idea is partially based off the experience of a primary school teacher that noticed that special education students enjoyed journaling with pictures and emojis. Not only did it give students but it also gave teachers a better insight in the students' lives. This idea is a splice of instant messaging applications (such as Slack, Messenger) and Proloquo2Go (converts text to images and then chains images together to form a complete sentence). In this application users can step up direct message streams or group chats with friends. When the user is typing their message, images will be suggested in an image panel. Images and emojis may be placed in with text to enhance the message.

11.3 APPENDIX 3 – USER TESTING PLANS

<u>11.3.1 ROUND 1 USER TESTING PLAN</u>

Evaluation ID	Go Fish, User Evaluation Round 1
Aims	1. Identify user's mental model of the core interaction pathways 2. Identify major usability issues 3. Identify effectiveness of the system as related to the problem space
Dates	13/04/2020 - 19/04/2020
Creators	Team Go Fish

Materials needed

1. Zoom (if applicable)
2. Observation sheets
3. Task List
4. Excel Spreadsheet (TAM (Technology Assessment Model), Task Completion Time) https://docs.google.com/spreadsheets/d/15C2_A8zoi1Vpe_AKHOdUncxG-IQncH9_KNNBvqEqj90/edit#gid=0
5. Low-fidelity Prototype https://xd.adobe.com/view/9b89e49b-9aa4-426e-6721-5b2405e602ee-edb8/screen/d8c18b5f-2e5f-40ff-b450-9dc9faae639c/iPad-25/?fbclid=IwAR0Aq5Lx6dhGyJVSwa-pMOdrzEH8J0OgOwbFbI-RaJ2o_CloHe6t0Lsv84UM&fullscreen&hints=on

Introduction

The facilitator is required to thank the user for their participation in the evaluation of the team's conceptual design. The facilitator is then to describe the purpose of the design project and how the team has been tasked with creating an digital solution with respect given to a set domain - in the case of Go Fish, social isolation for individuals with ASD (Autism Spectrum Syndrome). Next, the facilitator will introduce the conceptual design and describe its intended purpose. This purpose is to alleviate social isolation for individuals with ASD through encouraging and facilitating the development of social skills. The team aims to achieve this through having users work in a team to collaborate and communicate with each other to create a storybook. The facilitator will detail how the session will unfold and how the user's evaluation of the design will be monitored during the testing period.

Overview

This testing will be carried out to evaluate the user's interaction approach with Go Fish's design. The aim is to evaluate the design in addition to the interaction experience provided by the concept. The facilitator will stress that this evaluative process aims to evaluate the design, not the user's capabilities. Next, the facilitator will address the importance of the user remaining completely honest throughout the testing period, and not to be afraid to voice their thoughts, critiques and opinions.

The testing will be conducted as a series of tasks which the user will be given and asked to complete to their best ability. Each task will be timed from when the task is given to the moment of completion or until the user states that they "give up". Should the user choose to "give up", or there is an apparent difficulty in task completion, the user will be asked to identify the root of the problem and specify any relevant adjustments they believe could be made to improve the design.

The user will then be made aware that the order of tasks aims to follow a logical interaction flow. Thus, the user is not expected to return to the home page upon completion of the task and, instead, continue evaluating the design from the page currently in use. Finally, the user will be asked if they understand the expectation of this evaluation period.

The user will then be given the tasks to complete on a piece of paper (or have the tasks read out to them). These tasks can be found below:

Tasks to complete:

1. Create a New Story
2. Paint a picture on your page of the story
3. See what your teammates are saying in the group chat
4. Go to the next page that your teammate created
5. From the current page you are on, skip to page 5
6. Publish your story to the gallery
7. Navigate to 'home'
8. From the 'home' page, find your classmates story called 'WHEEL OF FORTUNE'
9. Give the 'WHEEL OF FORTUNE' a 'heart react'
10. Comment on the 'WHEEL OF FORTUNE'
11. Delete the comment you just made
12. Report/Block User 9

The facilitator will make observations and record data as the user completes each task. It should be noted that, during the formal testing period where the user is interacting with the prototype, the facilitator will not talk, discuss, or prompt the user in any way. This aims to negate bias and inaccurate results.

After the user has completed all set tasks, they will be asked to complete a TAM evaluation based on their experience using the low-fidelity prototype.

Interviews will be conducted upon the conclusion of the formal testing period. The user will be required to complete a TAM evaluation in order to systematically gauge the tester's response to the conceptual design. However, in order to obtain a more in-depth insight into the user's unique responses, the facilitator will ask the tester personalised questions revolving around their respective issues encountered and evident frustrations. Once the testing period has ended, the facilitator will thank the user for their time and effort.

Task	Observation	Ask
#1 Type a theme/emotion, create a New Story, paint a picture on your page of the story	Their reaction, are they confused/interested…?	**Emotional Intelligence:** "What do you think of using tags to address your emotion?"
#2 See what your teammates are saying in the group chat	**Social Isolation:** Their reaction, are they confused/engaged…? **Comprehensiveness:** The number of mistakes made before clicking the right UIs.	**Collaboration:** "From 1(very ineffective)-5 (very effective), can a group chat help engaging you to communicate with your classmates?"
#3 (Explain to them that teammates take turns to draw pages of the story) Go to the next page that your teammate created. From the current page you are on, skip to page 5 Publish your story to the gallery	**Comprehensiveness:** The number of mistakes made before clicking the right UIs. **Accessibility/Simplistic:** The time user used to finish the task.	**Comprehensiveness:** "Do you have any difficulties navigating from this canvas?" **Facilitates Social Skills:** "How does a turn-based approach help you improve social skills?" **Collaboration:** "From 1(strongly disagree)-5 (strongly agree), do you think this group activity strengthens your bond with your classmates?"
#4 Read through your classmate's story called 'WHEEL OF FORTUNE'	**Comprehensiveness:** The number of mistakes made before clicking the right UIs. **Accessibility/Simplistic:** The time user used to finish the task.	

#5 Give the book a 'heart react' Comment on the book Delete the comment you just made Report/Block User 9	**Comprehensiveness:** The number of mistakes made before clicking the right UIs, and what mistakes have they made.	**Non-Confrontational:** "From 1(strongly disagree)-5 (strongly agree), do you feel like you can express yourself safely in this community?" **Collaboration:** "How do comments and reactions help improve this story?" **Social Isolation:** "From 1(strongly disagree)-5 (strongly agree), do you feel engaged with the users of this community?"

11.3.2 ROUND 2 USER TESTING PLAN

Evaluation ID	Go Fish, User Evaluation Round 2
Aims	Identify effectiveness of system's ability to facilitate collaboration
Dates	14/05/2020 - 16/04/2020
Creators	Team Go Fish

Materials needed

1. Zoom (if applicable)
2. Observation sheets
3. Task List
4. Excel Spreadsheet (TAM (Technology Assessment Model), Task Completion Time) https://docs.google.com/spreadsheets/d/1SCM66505E4xa5f6FW-yvZgX3f2Bwwmn-lYCgO3SUsw78/edit#gid=0
5. Medium-fidelity Prototype: https://aggie.io/
6. Timer

Introduction

The facilitator is required to thank the user for their participation in the evaluation of the team's conceptual design. The facilitator is then to describe the purpose of the design project and how the team has been tasked with creating a digital solution with respect given to a set domain - in the case of Go Fish, social isolation for individuals with ASD (Autism Spectrum Syndrome). Next, the facilitator will introduce the conceptual design and describe its intended purpose. This purpose is to alleviate social isolation for individuals with ASD through encouraging and facilitating the development of social skills - namely, collaboration. The team aims to achieve this through having users work in a team to create a storybook. The facilitator will detail how the session will unfold and how the user's evaluation of the design will be monitored during the testing period.

Overview

This testing will be carried out to evaluate the user's interaction approach with Go Fish's design with respect given to the collaboration element. The testing session will thus be conducted in small focus groups of 2-3 participants. The aim is to evaluate the design in addition to the interaction experience provided by the concept. The facilitator will stress that this evaluative process aims to evaluate the design, not the user's capabilities. Next, the facilitator will address the importance of the user remaining completely honest throughout the testing period, and not to be afraid to voice their thoughts, critiques and opinions.

The testing will be conducted as one continuous task that will be compartmentalised into four subtasks. The facilitator will ask the users to complete these subtasks to their best ability. Each subtask will be completed to a predetermined time frame.

The user will then be made aware that the order of tasks aims to follow a logical interaction flow. Thus, the user is not expected to return to the home page upon completion of the task and, instead, continue evaluating the design from the page currently in use. Finally, the user will be asked if they understand the expectation of this evaluation period.

The user will then be given the tasks to complete on a piece of paper (or have the tasks read out to them). These tasks can be found below:

Task to complete:

1. Create a story

Subtasks to complete:

1. Plan the story
2. Write the story for one page
3. Draw the main character for one page
4. Draw the background imagery for one page

The formal testing period will have the users work together to plan and create a three-page story. Each user will be provided with a tablet/ laptop with all layers (bar the one they are currently working on) hidden from view. A collective team 'book' with all users' contributed layers visible will be displayed on a TV screen in front of the users. This acts as a representation of the team's combined effort to create a story page. Each user will need to rely on the TV screen to see how their contributions slot into the team's collective effort.

Each page, the 'role' of the users will rotate. These roles include writer, character artist and background artist. The writer will be interacting with the top-layer, the character artist will be interacting with the middle layer and the background artist will be interacting with the bottom layer.

The group of users will be allocated three minutes to plan their story in response to a given theme. Each user will be prompted with a question relating to the main character, the conflict

of interest and the story's setting respectively. This aims to facilitate a quick ideation process for storytelling.

After the three minutes of planning, the facilitator will assign the three roles to the three users. They will be told that they are to act in their given role and communicate with the other two teammates in order to successfully create a page. The users will be given three minutes to complete the first page, two minutes for the second and one minute for the third. The users will rotate roles after every page of the story.

The facilitator will make observations and record data as the users complete each subtask. It should be noted that, during the formal testing period where the user is interacting with the prototype, the facilitator will not talk, discuss, or prompt the users in any way. This aims to negate bias and inaccurate results.

After the users have completed all set tasks, they will be asked to complete a TAM evaluation based on their experience using the medium-fidelity prototype.

Interviews will be conducted upon the conclusion of the formal testing period. The user will be required to complete a TAM evaluation in order to systematically gauge the tester's response to the conceptual design. However, in order to obtain a more in-depth insight into the user's unique responses, the facilitator will ask the tester personalised questions revolving around their respective issues encountered and evident frustrations. Once the testing period has ended, the facilitator will thank the user for their time and effort.

Task	Observation	Ask
Preparation Let the users get familiar with the drawing tools of https://aggie.io/ If they feel comfortable with the drawing tools, start the test. The theme will be randomly generated (assigned), by a random object generator https://perchance.org/object		
#1 Set timer to 3 min Remind tester that they are given 3 minutes to plan a story with the assigned themes you generated Plan the story	**Facilitate Teamwork:** What kind of ideas have they exchanged? (e.g. what to draw, collaboration method, how the activity works)	**Collaboration:** "What decisions have you planned together in this task?"
#2 (Reset timer to 3 minutes Assign the roles as follows: The oldest user - Writer 2nd oldest - Character artist	**Facilitate Teamwork:** What kind of ideas have they exchanged? (e.g. what to draw, collaboration method, how the activity works)	**Collaboration:** "What decisions have you made together in this task?" **Facilitate Social Skills:**

least old - Background artist) **Writer:** Write the story for one page **Character artist:** Draw the main character for one page **Background artist:** Draw the background imagery for one page	**Facilitate Social Skills:** What conflicts do they have and did they manage to resolve them? **Comprehensiveness:** Did they do as their assigned roles? (e.g. Background artist drawing Character instead) **Accessibility/Simplicity:** Can they finish the task within 3 mins?	"From 1(very ineffective)-5 (very effective), can this help you to communicate with your classmates?" **Social Isolation:** "From 1 (strongly disagree)-5 (strongly agree), do you think this group activity strengthens your bond with your classmates?" **Social Isolation:** "From 1 (strongly disagree)-5 (strongly agree), do you feel engaged with the users in this task?" **Facilitates Social Skills:** "How does a turn-based approach help you improve social skills?"

11.3.3 ROUND 3 USER TESTING PLAN

Evaluation ID	Go Fish, User Evaluation Round 3
Aims	Identify effectiveness of system's progressive approach
Dates	8/06/2020 -13 /06/2020
Creators	Team Go Fish

Materials needed

1. Zoom (if applicable)
2. Observation sheets
3. Task List
4. Excel Spreadsheet (TAM (Technology Assessment Model), Task Completion Time) https://docs.google.com/spread-sheets/d/14Bp6byFnBi9ontnYRndG6qJvlZnB0PVj5O1H5rBx3oQ/edit#gid=0
5. Medium-fidelity Prototype: https://xd.adobe.com/view/23aaa02e-69e1-4a3e-425c-89c35f1d31ef-559b/screen/8e8a0df4-5a08-457e-b71c-3c125e2c81b7/iPad-39?fbclid=IwAR0-UpLXLn4qy8_5nkKexuvg6bHVHdms6HqZ-XPHiGgFfGqfJLPfu2sYWNI

Introduction

The facilitator is required to thank the user for their participation in the evaluation of the team's conceptual design. The facilitator is then to describe the purpose of the design project and how the team has been tasked with creating a digital solution with respect given to a set domain - in the case of Go Fish, social isolation for individuals with ASD (Autism Spectrum Syndrome). Next, the facilitator will introduce the conceptual design and describe its intended purpose. This purpose is to alleviate social isolation for individuals with ASD through encouraging and facilitating the development of social skills. This aims to be achieved through progressively introducing the user to the working functionality. The facilitator will detail how the session will unfold and how the user's evaluation of the design will be monitored during the testing period.

Overview

This testing will be carried out to evaluate the user's interaction approach with Go Fish's design with respect given to the progressive-approach element. The aim is to evaluate the design in addition to the interaction experience provided by the concept. The facilitator will stress that this evaluative process aims to evaluate the design, not the user's capabilities. Next, the facilitator will address the importance of the user remaining completely honest throughout the testing period, and not to be afraid to voice their thoughts, critiques and opinions.

The testing will be conducted as one continuous task that will be compartmentalised into small subtasks. The facilitator will ask the users to complete these subtasks to their best ability.

The user will then be made aware that the order of tasks aims to follow a logical interaction flow. Thus, the user is not expected to return to the home page upon completion of the task and, instead, continue evaluating the design from the page currently in use. Finally, the user will be asked if they understand the expectation of this evaluation period.

The user will then be given the tasks to complete on a piece of paper (or have the tasks read out to them). These tasks can be found below:

Task to complete:

1. Progress through the first few iterations of Fableous' working functionality

Subtasks to complete:

1. Complete the foreground artist introduction step
2. Complete the background artist introduction step
3. Annotate a given foreground/ background with text/audio
4. Create a three-page story about yourself
5. Work in a pair to illustrate a given story page

The formal testing period will have the users progress through the prospective design and pass through each of the five tasks. This aims to gauge the effectiveness of Fableous' progressive approach to features and collaboration. The facilitator will make observations and record data as the user completes each task. It should be noted that, during the formal testing period where

the user is interacting with the prototype, the facilitator will not talk, discuss, or prompt the user in any way. This aims to negate bias and inaccurate results.

After the user has completed all set tasks, they will be asked to complete a TAM evaluation based on their experience using the low-fidelity prototype. The user will be required to complete a TAM evaluation in order to systematically gauge the tester's response to the conceptual design. However, in order to obtain a more in-depth insight into the user's unique responses, the facilitator will ask the tester personalised questions revolving around their respective issues encountered and evident frustrations. Once the testing period has ended, the facilitator will thank the user for their time and effort.

Task	Observation	Ask
#1 Ask users to complete the foreground artist introduction step	**Accessibility/Simplicity:** Note any wrong clicks	**Accessibility/Simplicity:** "What prompted you to perform the task that way?"
#2 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** Note any wrong clicks	**Accessibility/Simplicity:** "What prompted you to perform the task that way?"
#3 Ask users to annotate a given foreground/ background with text/audio	**Accessibility/Simplicity:** Note any wrong clicks	**Accessibility/Simplicity:** "What prompted you to perform the task that way?"
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** Note any wrong clicks	**Accessibility/Simplicity:** "What prompted you to perform the task that way?" **Progressive Approach:** "On a scale of 1-5 how manageable was this task" "Did you feel like the application prepared you well for creating your own story?"
#5 Ask the users to work in a (simulated) pair to illustrate a given story page	**Accessibility/Simplicity:** Note any wrong clicks **Collaboration:**	**Accessibility/Simplicity:** "What prompted you to perform the task that way?" **Progressive Approach:**

| | Users did not try to perform task of teammate | "On a scale of 1-5 how manageable was this task"

"What do you think the 'achievement system' added to your overall experience?

Collaboration:

"Do you understand how this would be translated into a collaborative setting (i.e. working in a pair)? |
|---|---|---|

11.4 APPENDIX 4 – USER TESTING RESULTS

11.4.1 ROUND 1 USER TESTING RESULTS

User 1 - Year 6 primary school student. No Intellectual Disability.

Task	Comments
Create a New Story	The user thought the idea of tags would be good categorising books.
Paint a picture on your page of the story	Understood what to do immediately. Completed the task in under a second.
See what your teammates are saying in the group chat	One mis-click on the settings icon. Suggested a notification icon for new messages, for example a red circle with the number of unread messages. Agreed that the feature would be good for collaboration.
Go to the next page that your teammate created	Understood what to do immediately. Completed the task in under a second.
From the current page you are on, skip to page 5	Understood what to do immediately. Completed the task in under a second.
Publish your story to the gallery	Understood what to do immediately. Completed the task in under a second.
Navigate to 'home'	Understood what to do immediately. Completed the task in under a second.
From the 'home' page, find your classmates story called 'WHEEL OF FORTUNE'	Understood what to do. No mis-clicks.
Give the 'WHEEL OF FORTUNE' a 'heart react'	Incorrect went back to the gallery 5 consecutives times. Attempted to react to the cover of the book in the gallery page. Test supervisor had to intervene to complete the task.
Comment on the 'WHEEL OF FORTUNE'	Understood what to do. No mis-clicks.
Report/Block User 9	Understood what to do. No mis-clicks.
Delete the comment you just made	Understood what to do. Described the process being similar to the message deletion in tik-tok.

<u>Other comments:</u> Disliked the application name *'Fableous'*.

User 2 - Former primary school teacher. Experience in educating students with intellectual disabilities.

Task	Comments
Create a New Story	The user thought the idea of tags would be good categorising books.
Paint a picture on your page of the story	Understood what to do immediately. Completed the task in under a second.
See what your teammates are saying in the group chat	One mis-click, went to next page before viewing comments
Go to the next page that your teammate created	Understood what to do immediately. Completed the task in under a second.
From the current page you are on, skip to page 5	Understood what to do immediately. Completed the task in under a second.
Publish your story to the gallery	Understood what to do immediately. Completed the task in under a second.
Navigate to 'home'	Understood what to do immediately. Completed the task in under a second.
From the 'home' page, find your classmates story called 'WHEEL OF FOR-TUNE'	Several mis-clicks. Went back to my stories and attempted to search for the book by pressing the search icon. Then they went to the home page then the gallery page and selected the correct book.
Give the 'WHEEL OF FOR-TUNE' a 'heart react'	Incorrect went back to the gallery 5 consecutives times. Attempted to react to the cover of the book in the gallery page. Test supervisor had to intervene to complete the task. Disliked how reactions could only be given at the very end of the book. However, they mentioned that students with intellectual disabilities would probably use this feature often.
Comment on the 'WHEEL OF FORTUNE'	Understood what to do. No mis-clicks.
Report/Block User 9	Understood what to do. No mis-clicks.
Delete the comment you just made	Understood what to do. No mis-clicks.

Other comments: None

User 3 - High School Teacher - No Intellectual Disability

Task	Comments
Create a New Story	Tried to click 'create story' first without adding a theme, next click was themes then create story
Paint a picture on your page of the story	Successfully completed task (2 seconds), no wrong clicks
See what your teammates are saying in the group chat	One wrong click on the 'view more pages' arrow. Hesitated for a few seconds, then clicked the group chat icon. Said it could be labelled or more obvious
Go to the next page that your team-mate created	Successfully completed task (1 second), no wrong clicks
From the current page you are on, skip to page 5	Successfully completed task (1 second), no wrong clicks. Said they accidentally found it when looking for the group chat
Publish your story to the gallery	Successfully completed task (2 seconds), no wrong clicks
Navigate to 'home'	Successfully completed task (2 seconds), no wrong clicks
From the 'home' page, find your class-mates story called 'WHEEL OF FOR-TUNE'	Successfully completed task (4 seconds), no wrong clicks
Give the 'WHEEL OF FORTUNE' a 'heart react'	Hesitated for 7 seconds, asked if the right arrow would take them anywhere. Clicked the right arrow - said it should be labelled. No mis-clicks from that point on
Comment on the 'WHEEL OF FOR-TUNE'	Successfully completed task (3 seconds), no wrong clicks
Report/Block User 9	Successfully completed task (2 seconds), no wrong clicks
Delete the comment you just made	Successfully completed task (2 seconds), no wrong clicks

Other comments:

Said some things could be labelled better or have more relevant icons (group chat and comment section). Liked the creative aspect but thought that it wasn't super focused on group work

User 4 - Primary school teacher, with expertise in educating special needs and intellectual disabilities.

Task	Comments
Create a New Story	Really liked the idea of having the teacher specify the theme but children being able to add additional ones
Paint a picture on your page of the story	Successfully completed task (2 seconds), no wrong clicks. Said it had a very similar layout to iPad apps which was good and not frustrating
See what your teammates are saying in the group chat	Successfully completed task (2 seconds), no wrong clicks. Said it should be more obvious for children so that they know what the icon is and what it does.
Go to the next page that your teammate created	Successfully completed task (1 seconds), no wrong clicks. Said it should be more obvious that you aren't creating the page but it is your teammate.
From the current page you are on, skip to page 5	Successfully completed task (3 seconds), no wrong clicks. Again, said labels or bigger icons could be helpful
Publish your story to the gallery	Successfully completed task (4 seconds), no wrong clicks
Navigate to 'home'	Successfully completed task (2 seconds), no wrong clicks
From the 'home' page, find your classmates story called 'WHEEL OF FORTUNE'	Successfully completed task (5 seconds), no wrong clicks. Said they liked the icons and labels
Give the 'WHEEL OF FORTUNE' a 'heart react'	Tried clicking on the 'User 4' icon twice. Said that they were confused as to what they should do. Then clicked the next arrow. Said it shouldn't say page 3/3 or have another label/ icon which says 'feedback' or something similar. From here, no wrong clicks
Comment on the 'WHEEL OF FORTUNE'	Successfully completed task (2 seconds), no wrong clicks
Report/Block User 9	Successfully completed task (2 seconds), no wrong clicks. Asked if the teacher would be notified
Delete the comment you just made	Successfully completed task (2 seconds), no wrong clicks

Other comments:

Said they really liked the premise of the idea - it was a very non-confrontational way to help express and understand emotions. Liked the idea of working in teams to create a story but said it should be more obvious that they are working with others - maybe having an avatar on each of the pages.

User 5 - 23-year-old British person with Asperger's, alias "King Cobra", trying to keep the viewpoint of the target audience in mind when answering questions on its usefulness.

Task	Comments
Create a New Story	Very quick/intuitive, wasn't sure what type of data to put into participants (name, username, email?)
Paint a picture on your page of the story	Very quick/intuitive, symbols were nice
See what your teammates are saying in the group chat	Very quick but wasn't sure what the "your turn" text meant.
Go to the next page that your teammate created	Very quick/intuitive.
From the current page you are on, skip to page 5	Very quick/intuitive
Publish your story to the gallery	Very quick/intuitive
Navigate to 'home'	Very quick/intuitive, thinks the home button should always be shown in the top bar
From the 'home' page, find your classmates story called 'WHEEL OF FORTUNE'	Quick, not sure about the difference between "gallery" and "my stories" if its collaborative
Give the 'WHEEL OF FORTUNE' a 'heart re-act'	Went back to gallery and home screen numerous times, had to be told to scroll past final page. (different or separate symbol needed perhaps?)
Comment on the 'WHEEL OF FORTUNE'	Very quick/intuitive
Report/Block User 9	Very quick/intuitive
Delete the comment you just made	Very quick/intuitive

Other comments:

Lots of general feedback on the overall project. The wide range abilities and disabilities on the ASD spectrum makes it more difficult to make an application for. More severe cases of autism likely to struggle, would need testing. Thinks that the focus should be on getting special ed kids and general schoolkids to use it together, rather than just between other kids with ASD. Only used in classrooms rather than at home to stop potential online predatory behaviour, keep things supervised by teachers. Saw the emotional learning aspect minimal due to "inherent" aspects of ASD, but thinks the immediate socialisation aspect is great. Ideal target age: 4 - 10.

User 6 - Friend of a kid with ASD

Task	Comments
Create a New Story	Clicked "NEW STORY" but nothing happened (didn't add themes) Created story successfully after adding it Didn't know she had to add themes first Advice Make it more noticeable, let users know they have to type things first
Paint a picture on your page of the story	First time - painted the picture on a "new story" Second time - successfully done it by clicking "My Stories"
See what your teammates are saying in the group chat	Successfully completed but didn't understand why it was labelled "Your Turn" (not intuitive)
Go to the next page that your teammate created	Completed the task in the first go
From the current page you are on, skip to page 5	Completed the task in the first go. Advice - Not necessary to separate the little triangle and "Page 5 OF 5", should combine them
Publish your story to the gallery	Completed the task in the first go.
Navigate to 'home'	Completed the task in the first go.
From the 'home' page, find your classmates story called 'WHEEL OF FORTUNE'	Completed the task by clicking "gallery", but didn't know who her "classmate" was Unable to distinguish "My Stories" and "Gallery", but got used to it after
Give the 'WHEEL OF FORTUNE' a 'heart react'	Completed the task in the first go, but was confused once clicked on the story and was viewing the first page (didn't know how to "react") Advice - Right arrow on the last page can be changed to another symbol (more intuitive)
Comment on the 'WHEEL OF FORTUNE'	Completed the task in the first go.
Report/Block User 9	Completed the task in the first go.
Delete the comment you just made	Completed the task in the first go.

Other comments: None

<u>11.4.2 ROUND 2 USER TESTING RESULTS</u>

GROUP 1

User 1 (Sophie - not their real name) - Year 6 primary school student. No Intellectual Disability.

User 2 (Susan - not their real name) - Former primary school teacher. Experience in educating students with intellectual disabilities.

User 3 (Dylan - not their real name) - Former primary school teacher. Experience in educating students with intellectual disabilities.

Page 1 creation notes

Dylan - Story Text | Sophie - Main Characters | Susan - Background

- The team was given the theme of 'Outdoor Games' to create a story from. Initially had to discuss what the game was about and what conclusion the story would have
- Dylan took leadership and drove the main story idea, explain to Sophie and Susan what to draw for the first page
- A lot of general discuss about the colour and placement of picture on the page
- At some points different people started drawing conflicting ideas or they might have been drawing something tangential to the story line. Other team members pointed out such mistakes and offered suggestions to correct it.
- Possible enhancements to the story are suggested halfway through time limit
- All team members focused on their layer of the page
- Allowed 40sec of extra time (total time: 3mins + 40 sec) for the team to complete their first page

Page 1 completed

Page 2 creation notes

Dylan - Background | Sophie - Story Text | Susan - Main Characters

- Some disagreement over how various elements of the page were drawn
- Some confusion of what was being drawn and where it was being drawn
- Some struggle over changing colours on devices with small screen
- Disagreement over spelling in the text (there wasn't any time to correct this though)
- All team members focused on their layer of the page
- Allowed an additional 2mins (total time: 2mins + 2mins) for team to complete the page

Page 2 completed

Page 3 creation notes

Dylan - Main Characters | Sophie - Background | Susan - Story Text

- Susan wanted some clarification for the progression of the story. Dylan reminds the team on how the story should end
- More disagreement on what was being drawn on the page. Resolved by making a rule that only drawings relevant to the story should be included on the page
- All team members focused on their layer of the page
- Allowed an additional 3mins (total time :1mins + 3mins) for team to complete the page

Page 3 completed

Post Book-Creation Questions

- (Susan) - We had to decide that the outdoor game was going to be cricket
- (Sophie) - We had discussed ideas to make the story as realistic as possible
- (Dylan) - We had to agree on who started drawing first as well collectively coming up with a narrative for the story

"Do you think this application will be useful for improving communication amongst school students?"

- (Susan) - Yes, it would be good for group work
- (Dylan) - I don't think so since this would be an opportunity for kids to play up, misuse it and go off task. This could be fixed by offering a reward or incentive for completing the book which may help them stay on task.

"Do you think this group activity strengthens your bond with your classmates?"

- (Susan) - I don't think so because one person you bully, sabotage or muck around with the page which might upset some of the other students
- (Sophie) - Yes but it would work best if friends were put into the same team
- (Dylan) - I agree with this statement. Students who don't take the work seriously will bond over making silly pictures/doodles with the application while students who do take the work seriously will bond over creating a book, they are all proud of.

"Do you think students would be engaged with their tasks?"

- (Dylan) - I understood the task and the requirements for completing it which helped a lot in terms of engagement
- (Sophie) - Yes
- (Susan) - Yes, I think they would be engaged, but maybe there should be some planning involved before they do this activity

"Do you think a turn-based approach would help you improve social skills?"

- (Dylan) - Yes it would be good to change roles from a social standpoint, but I think more consistent results would be found each person focused on one layer for the entirety of the book.
- (Sophie) - Yes, I liked changing between different roles

GROUP 2

Task	Observation	Ask
Preparation Let the users get familiar with the drawing tools of https://aggie.io/ If they feel comfortable with the drawing tools, start the test. The theme will be randomly generated (assigned), by a random object generator https://perchance.org/object		
#1 Set timer to 3 min Remind tester that they are given 3 minutes to plan a story with the assigned themes you generated Plan the story	**Facilitate Teamwork:** What kind of ideas have they exchanged? (e.g. what to draw, collaboration method, how the activity works) **A:** One user acted as the facilitator. Each user contributed and answered their prompt questions which ended up underpinning the story. No user was left out of the discussion	**Collaboration:** "What decisions have you planned together in this task?" **A:** We are going to draw a story about a dog who is stressed because he saw a cat in the mirror We have an intro, conflict and resolution so we think we have planned for the three pages well
#2 (Reset timer to 3 minutes Assign the roles as follows: The oldest user - Writer 2nd oldest - Character artist least old - Background artist) **Writer:** Write the story for one page **Character artist:** Draw the main character for one page **Background artist:** Draw the background imagery for one page	**Facilitate Teamwork:** What kind of ideas have they exchanged? (e.g. what to draw, collaboration method, how the activity works) **A:** Often the writer would say what they were going to write and the two artists would work together to communicate the relationship between foreground and background **Facilitate Social Skills:** What conflicts do they have and did they manage to resolve them? **A:** conflict over drawing over each other. The concern was raised, it was a collective decision that the writer would erase their work and start writing it at the bottom of the canvas. **Comprehensiveness:**	**Collaboration:** "What decisions have you made together in this task?" **A:** That we are all very bad at drawing. But most of the decisions were made at the start together and then we went about doing our assigned roles and would congratulate each other if we were doing well, or draw attention to a certain someone who was drawing in the middle of the screen when they shouldn't have been **Facilitate Social Skills:** "From 1(very ineffective)-5 (very effective), can this help you to communicate with your classmates?" **A:** 4, it definitely gives us something to talk about. It was a sort of common goal that was light

Did they do as their assigned roles? (e.g. Background artist drawing Character instead)

A: All users stayed strictly in their roles for all three rounds. No problem with layers, however, the writer often would begin writing in the center of the page and subsequently cover the art that was being drawn

Accessibility/Simplicity:

Can they finish the task within 3 mins?

A: While the core essence of each page was present by the end of each of the three rounds, all users raised concern about the time restriction. Users said that they would have preferred a longer time to make each page. The users suggested that 5 mins would be ideal for each page so that they did not feel as rushed and could have created nicer pages

hearted and creative enough for us not to feel the need to be serious.

Social Isolation:

"From 1 (strongly disagree)-5 (strongly agree), do you think this group activity strengthens your bond with your classmates?"

A: 4, it was hilarious and good for building comradery - not so good for writing creative, coherent or meaningful stories though

Social Isolation:

"From 1 (strongly disagree)-5 (strongly agree), do you feel engaged with the users in this task?"

A: 5, we were very invested in the task and were trying to create something

Facilitates Social Skills:

"How does a turn-based approach help you improve social skills?"

A: It lets us try different things and not be jealous of someone who has a more interesting role. It is also interesting to pick up from where someone else left off. It keeps things light hearted and easy to joke about.

<u>11.4.3 ROUND 3 USER TESTING RESULTS</u>

User 1 - Year 6 primary school student. No Intellectual Disability.

Task	Observation	Ask
#1 Ask users to complete the foreground artist introduction step	**Accessibility/Simplicity:** Colour selection glitched a little causing her to select the colour twice.	**Accessibility/Simplicity:** The arrow prompted her to select the colour.
#2 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** Didn't initially click the done button.	**Accessibility/Simplicity:** The arrow prompted her to select the colour.
#3 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** No mis-clicks	**Accessibility/Simplicity:** Done prompted her to move on.
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** Accidentally went to the home page when trying to colour in the canvas.	**Accessibility/Simplicity:** Done prompted her to move on. **Progressive Approach:** 4 - Felt well prepared in creating her own story
#5 Ask the users to work in a (simulated) pair to illustrate a given story page	**Accessibility/Simplicity:** No mis-clicks **Collaboration:** Users did not try to perform task of teammate	**Accessibility/Simplicity:** Knew how previous tasks worked **Progressive Approach:** 4 - Grey out sections that shouldn't be used **Collaboration:** Understood how to work in a pair.

User 2 - Former primary school teacher. Experience in educating students with intellectual disabilities.

Task	Observation	Ask
#1 Ask users to complete the foreground artist introduction step	**Accessibility/Simplicity:** Again, selected the paint brush twice.	**Accessibility/Simplicity:** Tutorial dialogue at the bottom of the page made it easy to understand what to do.
#2 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** No mis-clicks	**Accessibility/Simplicity:** Tutorial dialogue at the bottom of the page made it easy to understand what to do.
#3 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** Clicked on the tutorial text and made the interface disappear.	**Accessibility/Simplicity:** Tutorial dialogue at the bottom of the page made it easy to understand what to do.
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** Did not close the page view immediately.	**Accessibility/Simplicity:** Tutorial dialogue at the bottom of the page made it easy to understand what to do. **Progressive Approach:** 5 - She felt comfortable creating a story on her own.
#5 Ask the users to work in a (simulated) pair to illustrate a given story page	**Accessibility/Simplicity:** No mis-clicks **Collaboration:** Users did not try to perform task of teammate	**Accessibility/Simplicity:** Used her knowledge from previous tasks to complete the collaboration task. **Progressive Approach:** 4 - "What do you think the 'achievement system' added to your overall experience? **Collaboration:** Confident with working in pairs after the tutorial.

User 3 - University Student. No Intellectual Disability.

Task	Observation	Ask
#1 Ask users to complete the foreground artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#2 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#3 Ask users to complete the background artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Prompts helped
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** Hesitant in moving between pages	**Accessibility/Simplicity:** Wasn't sure how to move between pages **Progressive Approach:** 4 - Confident on what to do for each step
#5 Ask the users to work in a (simulated) pair to illustrate a given story page	**Accessibility/Simplicity:** No wrong task **Collaboration:** Users did not try to perform task of teammate	**Accessibility/Simplicity:** Did it a few tasks ago **Progressive Approach:** 4 - Should make it more obvious who uses what **Collaboration:** Understood how to work in a pair.

User 4 - Teacher. Experience in educating students with intellectual disabilities.

Task	Observation	Ask
#1 Ask users to complete the foreground artist introduction step	**Accessibility/Simplicity** Selected paint brush twice	**Accessibility/Simplicity:** Arrow points to it
#2 Ask users to complete the background artist introduction step	**Accessibility/Simplicity** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#3 Ask users to complete the background artist introduction step	**Accessibility/Simplicity** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** Was not sure how to navigate between pages	**Accessibility/Simplicity:** Tutorial made it clear **Progressive Approach:** 4 - She felt comfortable creating a story but not sure how to move between pages
#5 Ask the users to work in a (simulated) pair to illustrate a given story page	**Accessibility/Simplicity:** No mis-clicks **Collaboration:** Users did not try to perform task of teammate	**Accessibility/Simplicity:** Used her knowledge from previous tasks to complete the collaboration task. **Progressive Approach:** 4 - "What do you think the 'achievement system' added to your overall experience? **Collaboration:** Confident with working in pairs after the tutorial.

User 5 - IT Consultant. No intellectual disability

Task	Observation	Ask
#1 Ask users to complete the fore-ground artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#2 Ask users to complete the back-ground artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#3 Ask users to complete the back-ground artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrow points to it
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Tutorial made it clear **Progressive Approach:** 5 - Felt comfortable creating story. Follows basic design practice
#5 Ask the users to work in a (simu-lated) pair to illustrate a given story page	**Accessibility/Simplicity:** No mis-clicks **Collaboration:** Users did not try to perform task of teammate	**Accessibility/Simplicity:** Learnt how to do it previously - a bit repetitive **Progressive Approach:** 5 **Collaboration:** Confident with working in pairs after the tutorial.

User 6 - University Student

Task	Observation	Ask
#1 Ask users to complete the fore-ground artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrows
#2 Ask users to complete the back-ground artist introduction step	**Accessibility/Simplicity:** No wrong clicks	**Accessibility/Simplicity:** Arrows
#3 Ask users to annotate a given foreground/ background with text/audio	**Accessibility/Simplicity:** Thought he can move the text	**Accessibility/Simplicity:** Arrows
#4 Ask users to complete a short story about themselves	**Accessibility/Simplicity:** Spent some time to figure out how to add pages	**Accessibility/Simplicity:** Didn't know how to add pages **Progressive Approach:** 4 - Yes, was guided step by step
#5 Ask the users to work in a (simu-lated) pair to illustrate a given story page	**Accessibility/Simplicity:** Hesitated in the beginning (didn't know what role he is) **Collaboration:**	**Accessibility/Simplicity:** Just clicked on a random area, couldn't get to draw **Progressive Approach:** 3 - Didn't really notice **Collaboration:** Both roles are pretty obvious

11.5 APPENDIX 5 – TAM QUESTIONAIRE AND RESULTS

11.5.1 ROUND 1 TAM

Code	Question	1	2	3	4	5	6	7	8	9	10	11	12	Average	1	2	3	4
PU1	I can accomplish collaborating with others more quickly using Fableous	2	2	2	3	3	3							2.500	0	3	3	0
PU2	I can accomplish collaborating with others more easily using Fableous	3	3	3	3	2	3							2.833	0	1	5	0
PU3	Fableous enhances my effectiveness in communicating with others	3	3	2	3	2	4							2.833	0	2	3	1
PU4	Fableous enhances my efficiency in improving my social skills	1	3	2	3	1	4							2.333	2	1	2	1
PU5	Fableous enables me to make better decisions in expressing myself and working with othe	2	3	3	3	2	2							2.500	0	3	3	0
PU6	Overall, I find Fableous useful	3	3	3	4	4	3							3.333	0	0	4	2
PEOU1	Learning to use Fableous is easy for me	4	3	4	4	3	3							3.500	0	0	3	3
PEOU2	It is easy to use Fableous to accomplish my goal of effectively collaborating with others to	3	3	3	3	4	4							3.333	0	0	4	2
PEOU3	Overall, I believe Fableous is easy to use	4	3	4	4	3	3							3.500	0	0	3	3
ATT1	In my opinion, it is desirable to use Fableous	3	4	4	4	3	4							3.667	0	0	2	4
ATT2	I think it is good for me to use Fableous	3	4	4	4	3	4							3.667	0	0	2	4
ATT3	Overall, my attitude towards Fableous is favourable	3	4	4	4	3	4							3.667	0	0	2	4
ITO1	I will use Fableous on a regular basis in the future	2	4	3	3	3	2							2.833	0	2	3	1
ITO2	I will frequently use Fableous in the future	2	3	2	3	2	2							2.333	0	4	2	0
ITO3	I will strongly recommend others (individuals with ASD) to use Fableous	3	4	3	4	4	4							3.667	0	0	2	4

11.5.2 ROUND 2 TAM

Code	Question	1	2	3	4	5	6	7	8	9	10	11	12	Average	1	2	3	4
PU1	I can accomplish collaborating with others more quickly using Fableous	3	4	3	3	2	4	4						3.286	0	1	3	3
PU2	I can accomplish collaborating with others more easily using Fableous	3	3	3	3	3	2	4						3.000	0	1	5	1
PU3	Fableous enhances my effectiveness in collaborating with others	4	3	3	2	3	3	3						3.000	0	1	5	1
PU4	Fableous enhances my efficiency in improving my social skills	3	3	3	3	2	3	3						2.857	0	1	6	0
PU5	Fableous enables me to make better decisions in expressing myself and working with othe	4	3	4	3	2	3	3						3.143	0	1	4	2
PU6	Overall, I find Fableous useful	4	4	4	3	2	3	4						3.429	0	1	2	4
PEOU1	Learning to use Fableous is easy for me	3	4	3	4	4	1	1						2.857	2	0	2	3
PEOU2	It is easy to use Fableous to accomplish my goal of effectively working with others	4	4	3	3	2	2	3						3.000	0	2	3	2
PEOU3	Overall, I believe Fableous is easy to use	3	4	3	3	4	2	1						2.857	1	1	3	2
ATT1	In my opinion, it is desirable to use Fableous	4	3	4	3	2	3	3						3.143	0	1	4	2
ATT2	I think it is good for me to use Fableous	4	4	4	3	1	3	3						3.143	1	0	3	3
ATT3	Overall, my attitude towards Fableous is favourable	4	3	3	4	3	3	3						3.286	0	0	5	2
ITO1	I will use Fableous on a regular basis in the future	4	3	3	2	1	2	2						2.429	1	3	2	1
ITO2	I will frequently use Fableous in the future	4	3	3	3	1	2	2						2.571	1	2	3	1
ITO3	I will strongly recommend others (individuals with ASD) to use Fableous	3	3	3	4	3		4						3.333	0	0	4	2
		c.o	c.o	w.o	s.c	d.c	c.r	s.c										
	4 - Strongly Agree, 3 - Agree, 2 - Disagree, 1 - Strongly Disagree																	

* c.o, w.o, d.o are initials of the participants

11.5.3 ROUND 3 TAM

Code	Question	1	2	3	4	5	6	7	8	9	10	11	12	Average	1	2	3	4
PU1	I feel that I was eased in to the functionality of Fableous	3	4	4	4	4	3							3.667	0	0	2	4
PU2	I can feel confident using Fableous	4	4	4	4	4	4							4.000	0	0	0	6
PU3	Fableous enhances my effectiveness in feeling confident using the application	3	4	4	4	4	4							3.833	0	0	1	5
PU4	Fableous enhances my efficiency in feeling confident using the application	3	4	4	4	3	3							3.500	0	0	3	3
PU5	Fableous enables me to make better decisions in understanding what the application does	3	3	4	4	3	3							3.333	0	0	4	2
PU6	Overall, I find Fableous useful	3	4	4	4	4	3							3.667	0	0	2	4
PEOU1	Learning to use Fableous is easy for me	4	4	4	4	4	4							4.000	0	0	0	6
PEOU2	It is easy to use Fableous to accomplish my goal of feeling confident in story-telling	3	3	3	4	3	3							3.167	0	0	5	1
PEOU3	Overall, I believe Fableous is easy to use	4	4	4	4	4	4							4.000	0	0	0	6
ATT1	In my opinion, it is desirable to use Fableous	4	4	4	4	4	4							4.000	0	0	0	6
ATT2	I think it is good for me to use Fableous	3	3	4	3	3	4							3.333	0	0	4	2
ATT3	Overall, my attitude towards Fableous is favourable	4	4	4	4	3	4							3.833	0	0	1	5
ITO1	I will use Fableous on a regular basis in the future	2	3	3	3	3	3							2.833	0	1	5	0
ITO2	I will frequently use Fableous in the future	2	3	3	3	3	3							2.833	0	1	5	0
ITO3	I will strongly recommend others (individuals with ASD) to use Fableous	4	4	4	3	4	3							3.667	0	0	2	4
		So(	SiC	CO	WC	CO												
	4 - Strongly Agree, 3 - Agree, 2 - Disagree, 1 - Strongly Disagree																	

* c.o, w.o, d.o are initials of the participants

11.6 APPENDIX 6 – TAM SYNTHESIS

User Tested	Roles	According Changes in Design	Other Remarks
User1	Year 6 primary school student. No Intellectual Disability.	Ø "Notification icon should be present for new messages, for example a red circle with the number of unread messages." Ø Change book "react" icons Maybe, design react based on familiar social media (e.g. "Described the process being similar to the message deletion in tik-tok.")	Good: Ø tags would be good categorising books Bad: Ø Disliked the application name 'Fableous'.
User 2	Former primary school teacher. Experience in educating students with intellectual disabilities.	Ø Make the close button of group chat more visible Ø Change page name of "My Stories" and "Gallery" Ø Allow users to react at any page of the book	Good: Ø tags would be good categorising books Ø students with intellectual disabilities would probably use react feature often Bad: Ø Disliked how reactions could only be given at the very end of the book
User 3	High School Teacher - No Intellectual Disability	Ø Make change theme text field more visible Ø "it(Group chat icon) could be labelled or more obvious" Ø "it(next page arrow) should be labelled" Ø "have more relevant icons (group chat and comment section"	Good: Ø Liked the creative aspect Bad: Ø Wasn't super focused on group work
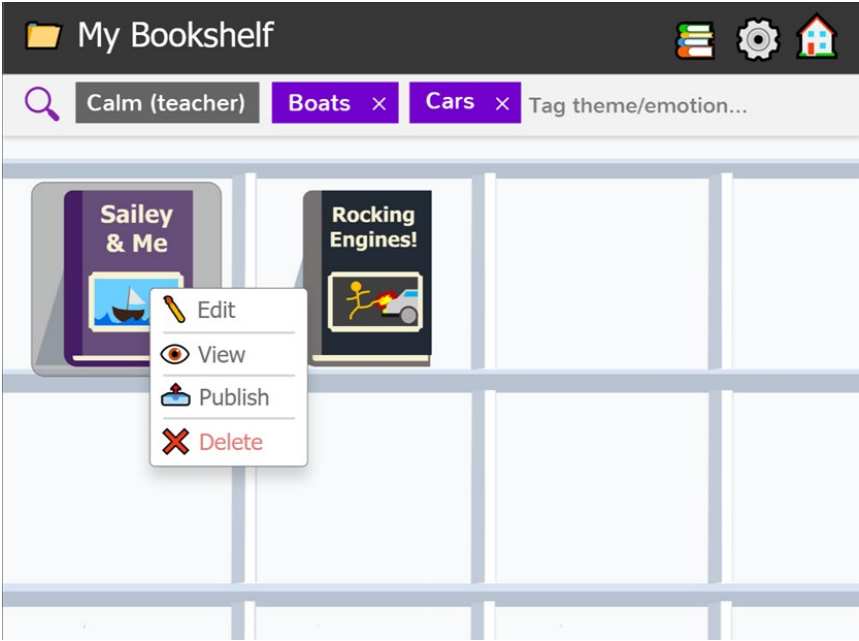
| User 4 | Primary school teacher, with expertise in educating special needs and intellectual disabilities. | Ø "it(Group chat icon) should be more obvious that you aren't creating the page, but it is your teammate." "should be more obvious that they are working with others - maybe having an avatar or something more obvious on each of that pages and saying who is doing what."

Ø "labels or bigger icons (on navigations) could be helpful"

Ø "it(story page navigation) shouldn't say page 3/3 or have another label/ icon which says 'feedback' or something similar."

Ø "Asked if the teacher would be notified" Notify teacher when report is sent. | Ø Really liked the idea of having the teacher specify the theme but children being able to add additional ones

Ø Draw page had a very similar layout to iPad apps which was good and not frustrating

Ø Very non-confrontational way to help express and understand emotions.

Ø Liked the idea of working in teams to create a story Bad: |

| User 5 | 23 year old British person with Asperger's, alias "King Cobra", trying to keep the viewpoint of the target audience in mind when answering questions on its usefulness. | Ø "wasn't sure what type of data to put into participants(name, username, email?)" Give examples in the placeholder

Ø Make home button always be shown in the top bar

Ø Change page name of "My Stories" and "Gallery"

Ø separate symbols of "Next page" "Previous page" arrows and "React book" icon | Ø More severe cases of autism likely to struggle, would need testing.

Ø Thinks that the focus should be on getting special ed kids and general schoolkids to use it together, rather than just between other kids with ASD.

Ø Only used in classrooms rather than at home to stop potential online predatory behaviour, keep things supervised by teachers.

Ø Saw the emotional learning aspect minimal due to "inherent" aspects of ASD

Ø The immediate socialisation aspect is great.
Ø Ideal target age: 4 - 10. |

| User 6 | Friend of a kid with ASD | Ø "Make it (add theme textbox) more no-ticeable, let users know they have to type things first"

Ø Not necessary to separate the little tri-angle and "Page 5 OF 5", should combine them

Ø Change page name of "My Stories" and "Gallery"

Ø Right arrow on the last page can be changed to another symbol (more intui-tive) | |

11.7 APPENDIX 7 – ADDITIONAL PAGES OF CURRENT PROTOTYPE

TEAM CARS GROUP CHAT X User 2: Page 3 done, what's next? 13:48 User 3: Oh it's my turn now... 14:50 We can draw the person landed on the beach, lying on the sand with the boat. 14:53 User 3: Sure I will draw that 15:03 Type message...	Group Chat Page (For long distance usage)
📁 My Bookshelf 🔍 Calm (teacher) Boats × Cars × Tag theme/emotion... Sailey & Me Rocking Engines! 🖊 Edit 👁 View 📤 Publish ❌ Delete	My Stories Page

	Public Gallery Page
	Feedback Page

11.8 APPENDIX 8 – PREVIOUS PLAN

Below, the team has deconstructed the project into milestones with associated to-dos. This plan has been established with respect given to the current stage of the project design. To date, the team has been able to follow the previously proposed plan. The team still aims to complete an additional round of user testing before the final project proposal. As such, the plan for milestones will remain relatively similar to the last plan as a result of its capacity to uphold the iterative design process. Each milestone has been allocated to a team member with an ideal completion date. The team should continue to utilise this plan when going forward with project development and team management.

MILESTONE	TASK	TEAM-MATE COMPLET-ING	COM-PLE-TION DATE (2020)
RESEARCH	• Further research into usability issues and potential underlying ineffective design • Further research into Gamification for ASD users	Whole team	Week 11
RESEARCH	• Conduct research into the gaps in the team's collective knowledge • Address all questions as outlined in Section 5.0	Whole team	Week 11
CONCEPTUAL MODEL/ PROTOTYPE	• Finalise changes to be made to conceptual model and prototype with respect given to research and analysis of evaluations	Whole team	Week 12
PROTOTYPE	• Establish purpose for testing round (collaboration and communication between users) • Develop a medium-fidelity/high fidelity prototype	Nicole	Week 13
PROTOTYPE	• Write testing plan and protocol • Establish evaluative techniques that will best facilitate the testing purpose	Michelle	Week 13
PROTOTYPE/ EVALUA-TION	• Conduct user testing	Whole team	Week 13
EVALUATION	• Input and summarise all data obtained by testing • Translate data into tables, graphs and figures for analysis	Michael	Week 13

ANALYSIS	• Identify recurring trends, themes and usability issues • Extrapolate on data to gain relevant insights into the success of the deployed design	Michael	Week 13
REPORT (INTRODUCTION/OVER-VIEW OF DESIGN MAJOR CHANGES)	• Write the introduction and overview of the team's progress and findings • Recap purpose, problem space and conceptual design • Overview of the overall changes made to the project (such as design, conceptual model, problem space, stakeholders and prototype)	Michelle	Week 14
REPORT (BACKGROUND)	• Update section with respect given to additional research, findings of user evaluations and existing systems	Chalinda	Week 14
REPORT (STAKEHOLDERS)	• Update section with respect given to further user research • Generate personas and storyboards pertinent to *Fableous*	Andy	Week 14
REPORT (QUESTIONS)	• Identify gaps in team's collective knowledge • Further establish unknowns going forward with system development	Cyrus	Week 14
REPORT (CONCEPTUAL MODEL)	• Update Conceptual Design Statement with respect to research and iteration requirements (See Section 7.3) • Update design principles	Michael	Week 14
REPORT (PROTOTYPE)	• Write the process of prototype development • Detail changes made with justification • Annotated wireframes • Feature/function deconstruction and description • Task flow diagram	Nicole	Week 14
REPORT (EVALUATION AND ANALYSIS OF DE-SIGN)	• Detail recurring trends, themes and usability issues that user feedback highlighted • Establish changes that should be made to the design to address these findings • Define user needs/goals	Michael and Nicole	Week 14
REPORT (PLAN)	• Possible future direction/ improvements that would be made	Michelle	Week 14

	• Iterate on the milestones/ deliverables with respect given to team progress		
REPORT (TEAM REFLEC-TION)	• Provide commentary on the team's work so far this semester o The direction the team has taken and the team's work focused on the project goals o Process that the team has followed and how effectively Go Fish has been operating as a unit • Address the impacts of COVID-19 in regards to the project and teamwork	Whole team	Week 15
CONCLUSION	• Write the conclusion summarising team findings and plan for future development	Michelle	Week 15
REFERENCES	• Compile/alphabetize sources	Chalinda	Week 15
APPENDIX	• Compile/ sort references for Appendices	Andy	Week 15
DOCUMENT DESIGN	• Format report as per design requirements of template	Andy	Week 15
EDITING	• Edit/ proofread document	Michelle	Week 15