Design Prototype Documentation

DECO3500 - Social Mobile Computing

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Prepared for: Workshop W02

Introduction

Effective communication between teachers and parents is a necessity to ensure the success of a school. Communication in schools can be classified as either one-way or two-way. One-way communication occurs when teachers aim to inform the parents about learning activities and resources, school events and the progress of a child. Whereas, two-way communication between both parents and teachers endorses positive relations, is the key to effective and efficient engagement in schools and ensures the best outcome for a child. Nevertheless, a recent survey performed by research institution, *Gallup* found that only 20% of parents feel "fully engaged and involved" in their child's learning signalling a lack in both one-way and two-way communication. In changing times, teachers must continue to develop and expand their skills in order to maximise effective communication with parents. Utilising modern technology, the initial project proposal presented the communication opportunity available to schools and teachers. The proposal also described the team who created the concept, their communication methods throughout the duration of the project and the project plan. This document describes the process involved in creating the prototype, to which the final prototype is linked. Finally, promotional material for the prototype is included as well as task allocation throughout the project.

Concept

EduBoard addresses the community problem domain with an education focus. The concept effectively combines multiple communication and sharing platforms like Trello, Google Drive, Slack and Padlet to create a real-time and virtual collaboration tool to enhance children's learning. Specifically, Eduboard is a web-based application utilising a modern and collaborative interface, which aims to enhance the communication between teachers and parents within schools. Its application nature also allows for users to easily view and upload content from their mobile phone. Moreover, using modern technology, EduBoard has the intent to foster an environment whereby parents feel more engaged and involved in their child's learning, which will ultimately encourage parents to further assist their children. The primary target audience is parents of primary school aged children where fundamental learning activities are present. Hence, Eduboard is a platform for sharing this educational content.

EduBoard is a dashboard and padlet like system, whereby teachers can share learning and school resources with parents via a simple post. Learning resources encompass classroom goals, lesson plans, reading material that informs lesson plans, tutorial videos, homework materials and homework assistance resources. Moreover, school resources includes attendance and behavioural records, regular event updates, school newsletters and academic calendars. Ultimately what the teacher shares depends on what they deem to be most useful to the parents, the purpose of Eduboard is to be a sharing format that is flexible to the needs of the teacher.

In terms of usability, each teacher and or class possesses a dashboard and each parent is encouraged to create an account. The teacher invites a particular parent to join the dashboard with the classroom password. Utilising their account and classroom password, a parent has access to the teacher's dashboard. When a teacher uploads content, each resource is tagged and filtered into a category. Tagged items can be viewed in each category on the left hand side of the dashboard. This effectively allows for ease of filtering results and locating content. Online messaging is also available in Eduboard whereby there is a general chat channel between all users of that particular dashboard. Further, there is the option to privately message the teacher. However, to avoid constant messaging, the left hand side of the dashboard also showcases a frequently asked questions section with appropriate answers.

The concept of Eduboard specifically applies to the social and mobile theory of computer-supported cooperative work (CSCW) as coined by Irene Greif and Paul Cashman in 1984. Eduboard also applies to the concept of Collaborative Learning Work and Collaboration Awareness as presented by Dr. Charles Findley in 1987. Both these theories address how collaborative activities and their coordination can be supported by means of computer systems. Eduboard adheres to these theories as the concept is a centralised and shared information space where all activity is represented. Moreover, Eduboard is designed for multi-user collaboration, synchronous communication and concurrent work is possible as it is a different time and different place matrix. Finally, Eduboard also fosters an explicit and direct social environment whereby users are represented in the system and there is minimal anonymity. This effectively reduces acts of aggression, bullying and harassment. As the presence of social and mobile technology is increasing in the 21st century, adopting these theories in the design and development of Eduboard will enhance the usability and functionality of the concept.

Promotional Material

Logo

A logo for the concept was designed and developed as shown below. This informed Eduboard's colour scheme and typography that will be prominent throughout the interface.

Colour Scheme and Typography

Prototype Link

The following link displays the Eduboard prototype created using Adobe XD.

Process

The following section documents the process involved in creating the optimal design for Eduboard. User research in the form of a survey and generation of personas as well as the development of a low-fidelity sitemap and paper prototype are included. Moreover, the user testing process and results from this testing are included.

User Research

Survey

In order to complete comprehensive and accurate user research, the group developed a separate survey for both the parent and teacher user group. The teacher survey was given to primary school teachers and the parent survey was sent to parents of primary school aged children. Questions were of a similar format to ensure a controlled experiment and easy analysis of results. Further, a few small and informal interviews were conducted with parents of primary school aged children, particularly households of dual working parents. Interviewees were asked similar questions to that in the parent survey as well as encouraged to suggest further features.

- Link to the parent user survey: https://goo.gl/forms/jtDF9YvNEvz2zK813
- Link to the teacher user survey: https://goo.gl/forms/HKX1AxubLXciOebe2

Survey Results

- Currently parents and teachers communicate via the occasional phone call, email and
 formal/informal meetings like parent teacher interviews and classroom catch-ups. The
 issue with email is there is no way to confirm whether an email has been received.
 Moreover, this form of communication is one-directional, not collaborative and there is no
 simple thread of correspondence. Whereas, the main issue with meetings is both teacher
 and parent availability.
- Most primary schools do not utilise any form of educational based application.
- Feedback surrounding the implementation of Eduboard is positive as both teachers and parents believe it will enhance communication. More specifically, a family of dual working parents explained that as they do not collect their children from school, they are not regularly updated on their child's progress so a simple application containing lesson plans and homework materials would be very helpful.
- Learning resources should include tutorial videos, homework materials, lesson plans and resources, presentations and extra learning resources. However, the volume of these items needs to be monitored as it could become overwhelming for users.
- School resources should encompass school newsletters, social and academic calendars, sporting results and personal letters to parents.
- Many children also attend After School Care so a page for supervisors to upload content could be an additional feature as many parents also like to see what happens there.
- Eduboard should include a chat feature whereby parents can individually message a teacher.
- Many feel that a general chat section amongst the cohort could get abused and be annoying with the constant notifications.
- Teachers report that a frequently asked questions page is definitely needed and it may reduce constant messaging.

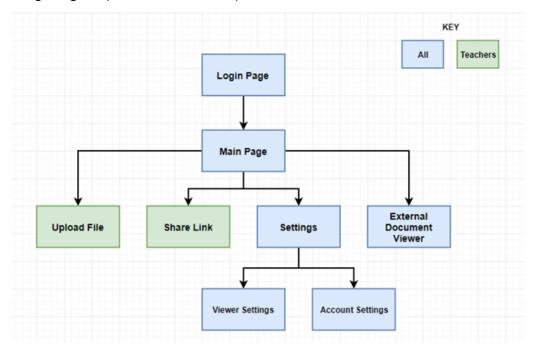
Personas

Following user surveys, personas were able to be more comprehensively developed. Personas are fictional characters constructed in order to characterise and symbolise different user types that are related to the field of design. The group has utilised personas in the project to develop a personal figure that can relate to all, thus the group shares a common connection to the figure

and it gives the team motivation to satisfy the figure's needs and wants. By considering the needs and wants developed, the group then has the ability to construct possible solutions. Evidently, parent and teacher personas have been constructed in order to understand and develop concepts to suit their interactions with the project prototype.

Site Map

The following image depicts a basic site map for Eduboard.



Login Page

The login page will appear the same for both teachers and parents, however dependent on the user type, the user will be directed to a main page applicable to either teachers or parents.

Main Page

The main page is the primary dashboard. This is where the uploaded content is located.

Upload File

The upload file link is applicable only for teachers. This is where PDF documents can be uploaded to the dashboard with a comment.

Share Link

The share link function is applicable only for teachers. This is where web addresses to can be uploaded to the dashboard with a comment.

Settings

The settings page will appear the same for both teachers and parents. There are two functions in this page including viewer settings and account settings. Viewer settings allows users to alter the visual appearance of their dashboard by changing font type and size and adding a theme.

Alternatively, account settings allows users to alter personal details like name, username, password and email as well as changing notification settings.

External Document Viewer

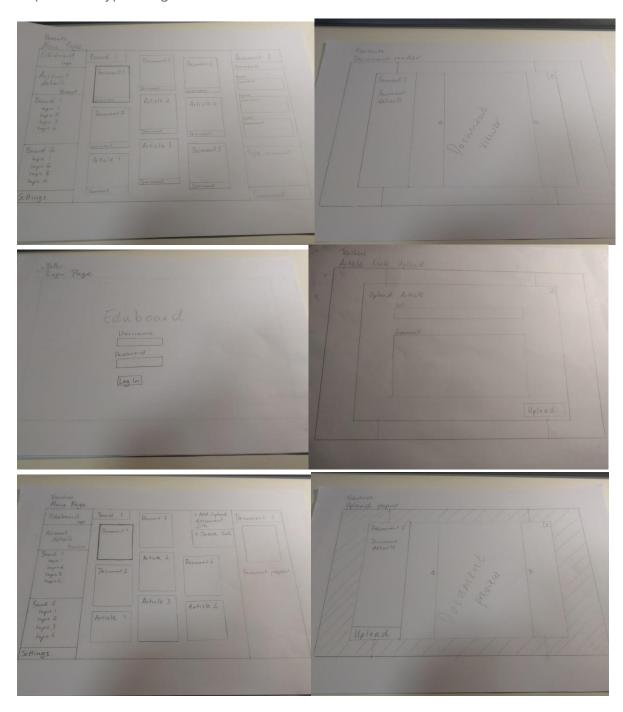
The external document viewer allows users to expand uploaded content on the main dashboard.

Users can then more thoroughly read, download and print content as well as view document details.

Paper Prototype

Based on results from initial user research and the site map design, a low-fidelity paper prototype was developed, which is shown below. The paper prototype is the first user test of the Eduboard concept, to which the group will test initial user reactions to the concept design. The main goal in conducting this user test is to determine whether the concept is effectively reflected in the interface design, whether users feel confident in being able to use this prototype and whether teachers and parents feel that this design will improve teacher/parent communication. The following test plans highlight that user test groups will consist of parents and teachers, however both will be tested separately. A Google Forms survey will be completed by parents and teachers on completion of the testing tasks.

Paper Prototype Images



Test Case ID #1	
Rationale	 As users need to sign in every time they use EduBoard, the sign in process must be quick and easy for users. The convenience of multiple login accounts (login via Facebook, Google) is outweighed by having a single EduBoard account.
Goal	 To test if the login process is quick and easy for users. To test whether only having login via an EduBoard account is most convenient for users.
Steps to be Executed	1. Instruct the user to log into EduBoard.
Record Actual Result	All users successfully logged into EduBoard
Pass/Fail	 Pass User successfully logs into EduBoard without error or confusion. Fail If the user cannot sign up at all. If the user cannot understand what to enter for the sign in fields.

Test Case ID #2	
Rationale	 Understanding the features on the main page and how to navigate through EduBoard. Ease of navigation are important for our users, especially parents or teachers who are not confident with using technology.
Goal	 To test if the main page is easy to navigate and if features are clearly identifiable. To establish if the language used to describe features, such as "board" are easy for users to understand.

Steps to be Executed	 Ask the user what they believe a "Board" and a "Topic" is. Instruct the user to state how many documents and articles have been uploaded to Board 1. Instruct the user to identify how they would comment on a particular document or article.
Record Actual Result	 All users could determine what a board and topic is All users could determine how many articles and documents were uploaded to Board 1 All users could identify how to comment on a document or article
Pass/Fail	 Pass User successfully understands the main page of EduBoard. Fail If the user cannot examine what a board or topic is. If user cannot state how many documents and articles are uploaded to board 1. If user cannot identify how they would comment on a document or article.

	Test Case ID #3
Rationale	 Uploading documents is essential to providing resources for parents. Without content for parents to view, EduBoard is redundant.
Goal	1. Assess the ease of uploading documents for teachers.
Steps to be Executed	 Ask user to upload a new document to Board 1. Ask user to preview all pages of the document before uploading.
Record Actual Result	 2 users completed task successfully 1 user had difficulty finding the upload document button, however once button was found was able to competently upload a document

Pass/Fail	 Pass User successfully understands how to upload documents to EduBoard.
	 Fail If the user cannot find/comprehend the upload button. If the user cannot navigate through a document preview.

Test Case ID #4	
Rationale	 Like uploading documents, teachers must be able to easily share articles to EduBoard. Content is critical for EduBoard to help inform parents regarding their child's education.
Goal	1. Assess the ease of sharing articles to EduBoard.
Steps to be Executed	 Ask user to share a new article to Board 1. Ask user to copy a link and then upload it.
Record Actual Result	 1 user completed the task successfully 2 users had difficulty identifying the share link button as the way to upload articles
Pass/Fail	 Pass User successfully understands how to upload articles to EduBoard. Fail If the user cannot find/comprehend the upload button. If the user cannot copy a link to be shared.

	Test Case ID #5	
Rationale	 Communicating directly with parents is critical for effective parent/teacher communication. Commenting on documents is an important way for parents and teachers to communicate about a resource. 	
Goal	 Determine if the commenting system is easy to use and understand. Establish if parents and teachers consider commenting on a document a necessary feature and if they would use this feature. 	
Steps to be Executed Record Actual	 Ask user to comment on Document 1. Ask user to read all previous comments. Ask user to write a new comment on Document 1 and post their comment. • All users successfully wrote, read and uploaded comments	
Result	All users successfully wrote, redu and aploaded comments	
Pass/Fail	 Pass User successfully understands how to read and post comments on documents. Fail If the user cannot open the comments section of a document. If the user cannot read previous comments. If the user has difficulty writing and posting their own comment. If the user does not feel that they would like to have commenting on articles. 	

Parent Proforma Tests

Test Case ID #1

Rationale	 As users need to sign in every time they use EduBoard, the sign in process must be quick and easy for users. The convenience of multiple login accounts (login via Facebook, Google) is outweighed by having a single EduBoard account.
Goal	 To test if the login process is quick and easy for users. To test whether only having login via an EduBoard account is most convenient for users.
Steps to be Executed	1. Instruct the users to log into EduBoard.
Record Actual Result	All users successfully logged into EduBoard
Pass/Fail	 Pass User successfully logs into EduBoard without error or confusion. Fail If the user cannot sign up at all. If user cannot understand what to enter for the sign in fields.

Test Case ID #2	
Rationale	 Understanding the features on the main page and how to navigate through EduBoard. Ease of navigation is important for our users, especially parents or teachers who are not confident with using technology.
Goal	 To test if the main page is easy to navigate and if features are clearly identifiable. To establish if the language used to describe feature, such as "board" are easy for users to understand.

Steps to be Executed	 Ask the user what they believe a "Board" and a "Topic" is. Instruct the user to state how many documents and articles have been uploaded to Board 1. Instruct the user to identify how they would comment on a particular document or article.
Record Actual Result	 2 users completed the task completely successfully 3 users had difficulty defining a board and a topic 1 user had initial difficulty finding where topics could be found, and then struggled to define a topic
Pass/Fail	 Pass User successfully understands the main page of EduBoard. Fail If the user cannot examine what a board or topic is. If user cannot state how many documents and articles are uploaded to board 1. If user cannot identify how they would comment on a document or article.

	Test Case ID #3
Rationale	 Communicating directly with parents is critical for effective parent/teacher communication. Commenting on documents is an important way for parents and teachers to communicate about a resource.
Goal	 Determine if the commenting system is easy to use and understand. Establish if parents and teachers consider commenting on a document a necessary feature and if they would use this feature.
Steps to be Executed	 Ask user to comment on Document 1. Ask user to read all previous comments. Ask user to write a new comment on Document 1 and post their comment.

Record Actual Result	 4 users successfully completed this task 2 users initially considered previous comments to be how to comment however soon identified how to comment
Pass/Fail	 Pass User successfully understands how to read and post comments on documents. Fail If the user cannot open the comments section of a document. If the user cannot read previous comments. If the user has difficulty writing and posting their own comment. If the user does not feel that they would like to have commenting on articles.

Paper Prototype Google Forms Survey Links

- Link to the parent paper prototype test: https://goo.gl/forms/TvBd3CFu2xkGL9rr2
- Link to the teacher paper prototype test: https://goo.gl/forms/oNBy3rYIV66CIMMa2

Paper Prototype Observations

- Paper prototype caused confusion by not having fake names, topics and comments completed
- Share link was not well worded and caused confusion
- Hierarchy system to illustrate the difference between topics and board could be better designed

Paper Prototype Survey Conclusions

 All users (both parents and teachers) had a good understanding of the concept of ByeTime. THe vast majority contained key buzzword such as communication, sharing, resources)

- Teacher users considered all tasks easy to complete, however suggested that task 4 (adding an article) was probably the most difficult
 - This can be attributed to the share article link wording being unclear
- 30% of users (both teachers and parents) found the main page layout to be slightly confusing
- All teachers said that they wanted to use EduBoard but didn't want it to send them lots of messages and wanted to know parents could use it too
- Parent users considered task 2 (defining a topic, board) to be the most difficult
 - This can in part be attributed to the paper prototype not having placeholder text,
 making understanding of functionality more difficult
- All parent users really wanted EduBoard
- All parents thought EduBoard was easy to use, despite the fact multiple teacher users objectively struggles at completing certain task objectives

Changes to Be Made Based on Paper Prototype User Feedback Results

- Add placeholder information for next prototype
- Change the share link text to "share article"
- Hierarchy with boards and topics will need to be redesigned slightly (different colours, fonts etc) to make distinction clearer

Paper Prototype User Feedback Results (Teachers)

Question 1: In your own words, please explain what is EduBoard?

3 responses

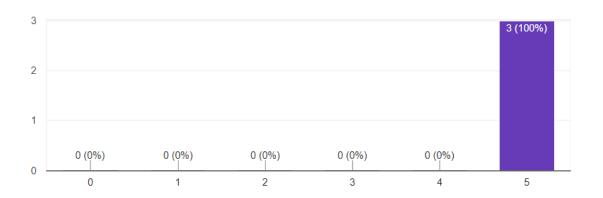
A tool for involving parents in the education of their children and providing a means of interaction between teachers and parents. It's really useful for keeping parents up to date on what their child is learning in class

A website to share files and media to parents

A platform for me to communicate to the parents of my students

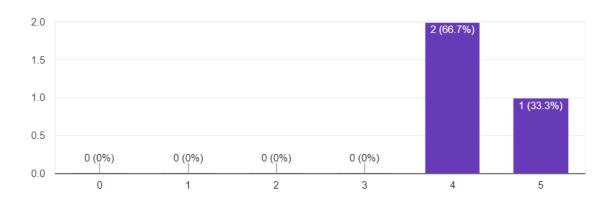
Question 2a: How difficult was the completion of Task 1?

3 responses

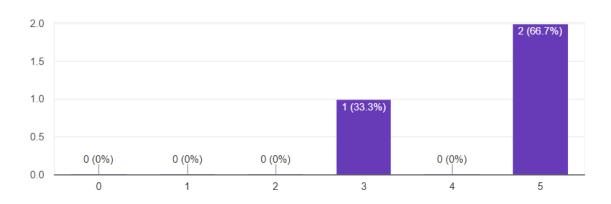


Question 2b: How difficult was the completion of Task 2?

3 responses

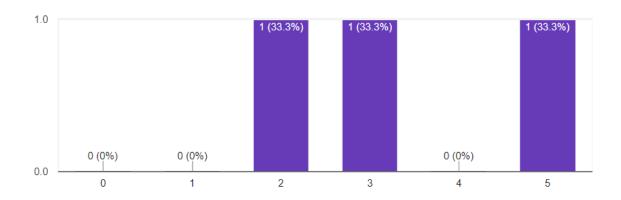


Question 2c: How difficult was the completion of Task 3?



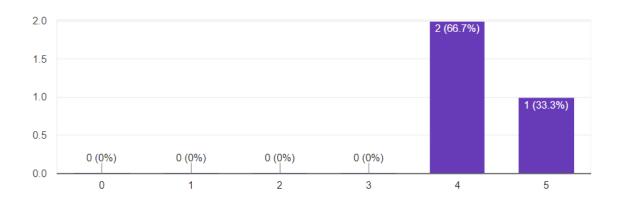
Question 2d: How difficult was the completion of Task 4?

3 responses



Question 2e: How difficult was the completion of Task 5?

3 responses

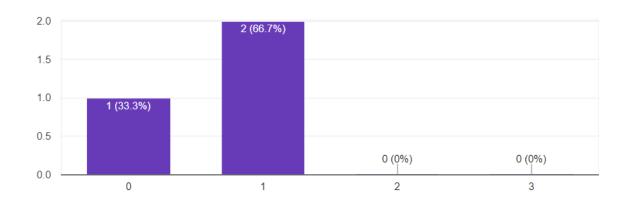


Question 3: Which task was most difficult to complete?

Adding an article
None
Task 4, I am not a very tech savvy person

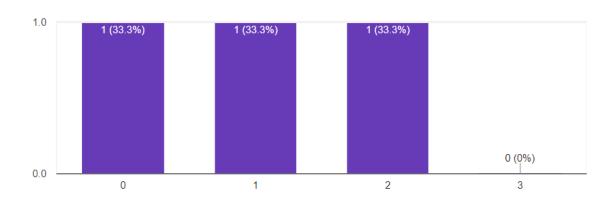
Question 4a: Was the layout of the main page...

3 responses



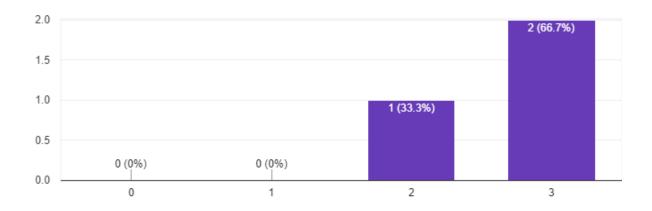
Question 4b: Was the layout of the main page...

3 responses



Question 4c: Was the layout of the main page...

3 responses



Question 5: Would you use EduBoard in helping to communicate with parents? Why/why not?

3 responses

I guess so. The parents would need to have much better computer skills to navigate it effectively

Yes if it supplements learning, why not?

Only if I don't get bombarded by messages

Question 6: Do you have any comments/criticisms/feedback regarding EduBoard?

3 responses

Adding an article shouldn't be labelled as "share link" As that's not a standardized navigation tool. Maybe labeling the articles to external resource would work better with share link. Urls can redirect to multiple things other than just articles so it's pretty limiting and counter-intuitive.

Looks great and definitely useful

Would you consider letting another person share an account with me/manage my account?

Paper Prototype User Feedback Results (Parents)

Question 1: In your own words, please explain what is EduBoard?

6 responses

Provides an interface between parent and the teacher and relevant educational information
an educational website allowing parents to communicate with teachers regarding the education of their children.

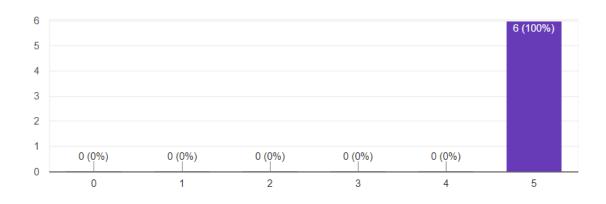
A platform for parents and teachers to communicate.

Resource sharing website

File sharing system

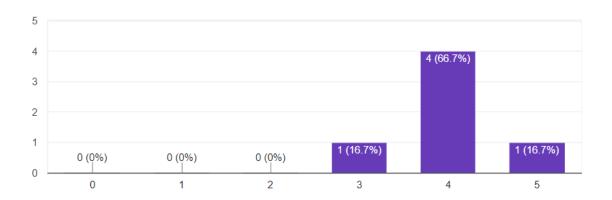
A dashboard system, where my child's teacher can share resources with me in one easy access place.

Question 2a: How difficult was the completion of Task 1?

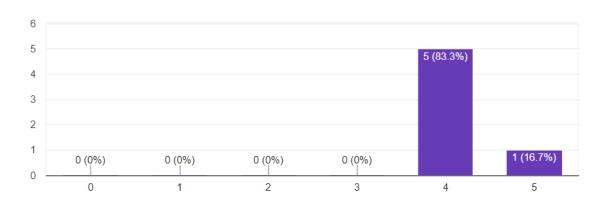


Question 2b: How difficult was the completion of Task 2?

6 responses



Question 2c: How difficult was the completion of Task 3?



Question 3: Which task was most difficult to complete?

6 responses

ANswering how many documents were in board 1

task 3

All of them were pretty simple. If I had to pick, It would be task 2.

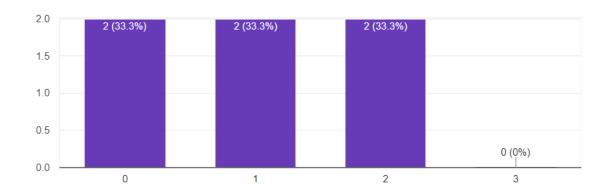
Task 2. Just because I was not accustomed to the layout.

Task 2

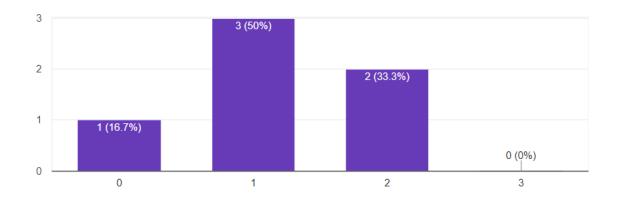
Probably task two, but they were all quite simple

Question 4a: Was the layout of the main page...

6 responses

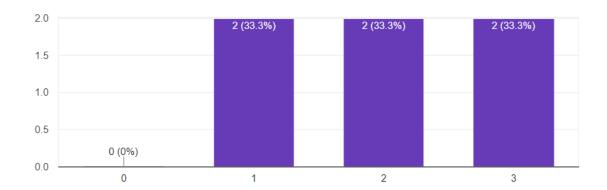


Question 4b: Was the layout of the main page...



Question 4c: Was the layout of the main page...

6 responses

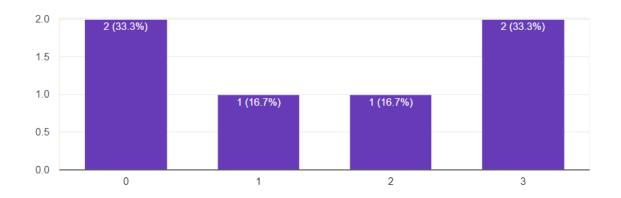


Question 5: Would you want EduBoard to be used by your child's teachers to share resources with you?

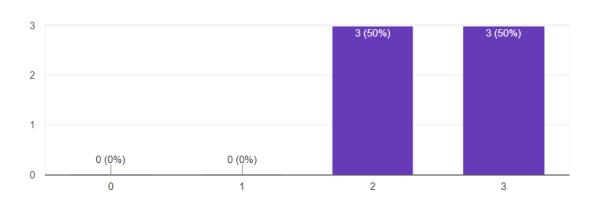
Yes, I believe it would provide a useful tool to send and receive information to the school and teacher		
yes		
Yes definitely!		
Yes/		
Yes		
Definitely. I need important items in one place. Sifting through my emails all the time is annoying and time consuming.		

Question 6: How would you rate your ability to use technology such as web based applications?

6 responses



Question 7: Where do you feel EduBoard would fit on the aforementioned difficulty scale?



Question 8: Do you have any comments/criticisms/feedback regarding EduBoard?

5 responses

The layout page initially for me provided too many choices and too much information to take it. It was less inviting than a simpler layout to someone whose technological skills are not strong.

no

Looks good and useful!

Would love to see this in real life

Nice, bright and clear colours is advised. Also remember to keep it simple.

Task Allocation

The following table outlines all tasks completed by individual team members throughout the duration of the semester long project.

Name	Tasks Completed
Abigail Hume	Active participation in stand-ups.
43931884	 Introduction and concept description in proposal.
	 User research - creation of surveys, collation of
	results, UI decision-making, two personas and
	sitemap.
	 Colour scheme and typography as well as coloured
	layout to inform electronic prototype.
Alison Collins	Active participation in stand-ups.
	 Team description and tags in proposal.
	 User research - two personas.
	 Creation of paper prototype, pro-forma tests and
	testing surveys.
	 Collation of paper prototype test results.

 Active participation in stand-ups. Communication methods and project plan in proposal. User research - two personas. Design and development of logo. 		Development of electronic prototype.
Development of functional component.	Gabby Mendoza	 Communication methods and project plan in proposal. User research - two personas.