

FINAL PROJECT COMPONENT

SQUIRTLE TEAM

November 28, 2021

Activity 1:

Based on the results of our usability inspection, we concluded that our application could use a couple of changes and minor tweaks to make it easier to use, when it comes to newer users. We noted that the user could be made aware of the functionalities of the virtual assistant when he/she accesses that page. The application could also do a better job of telling the user the key purpose of some functionalities.

To accomplish this, we have decided that at this point, through the usability test, we will aim to figure out how effective the application is so far, in terms of the main functions such as voting and checking election news and more. The results that we would obtain from this process would then be used to further refine our design to fall more in line with the users' desires while still maintaining the original vision that we've had. We would also add a link to the Virtual assistant page on a few other pages where we feel that users might need a help in order to make an intelligent, well-informed decision or where users may feel the need for the feature.

To obtain results that could be used to refine our overall design, we came up with the following test plan:

- A. We want to test our new navigation menu along with the other key functionalities of the app. The reason for these tests is that we are looking to follow up on our cognitive walkthrough results to see if we can help new users better understand the function of the virtual assistant and how to use it. The specifics are testing caste vote feature, viewing the results, filling the survey, viewing candidate's information, and testing the feasibility of virtual assistant.
- B. We would be asking users to perform specific tasks in the app to test the quality, convenience, and simplicity of navigation menu. For example, the user would be asked to select any task from the navigation menu. For instance, comparing two candidates using virtual assistance option and then casting vote.
- C. At the end of the testing, we are going to administer a satisfaction survey to help us evaluate the feedback from users.
- D. We would be taking note of all the minor and major confusions and errors that the users make during the testing. Also, we intend to rate the speed of users in accomplishing a specific task given to them and calculating the average of all participants for better understanding and analysis.
- E. Test Script:

Good afternoon, how are you today? I am a University of Winnipeg student participating in a group project for ACS-3916: Human Computer Interaction. We are working on the process of developing an application called UVote which helps students cast their vote for the University of Winnipeg Student Association elections, compare candidates and learn more about the elections and initiatives. We are in the semi-final stages of developing our application and would like some user feedback on a few features we are implementing before we complete our design. We require consent from you which will need to be filled out on the consent form we will provide to you. We are not judging you for these tasks, we are simply gaining more information about the features of our app and how users view and interact with these intended features.

Firstly, I'd like to know if you are familiar with the UWSA student elections that occur every year at the University of Winnipeg. Do you participate in these elections? We would like some feedback on the key functionalities of our app.

To start with, please take some time to view the Candidates information and then try to view any key events/news. Please let me know if you have any questions and what your thoughts are in the process.

Next, I would like you to compare two candidates using the virtual assistant and cast a vote based on your learnings. What are your thoughts on this process? Do you think a pop up is required to inform new users of how this process works and what the intended functionality is of the virtual assistant? Did you find the navigation from virtual assistant to voting screen to be easy to accomplish?

Now, as you have learned about some candidates with the help of virtual assistant. We would like you to cast a vote based on your learnings.

Moving further, I would like you to view the election results. Is it convenient and efficient? Once you're done with that we would move further with the feedback.

Now you have tested many key functionalities of our app. We would like you to test the feedback feature using the survey provided in the app. Please let us know if you encounter any difficulties and you have any suggestions.

Thanks!!! We are almost done with the testing part of the app and now in the end we would like you to take an app response questionnaire so that we can get a better understanding of your thoughts and expectations.

That's all!! Thanks for your cooperation with this effort to improve our application. Please let us know if you have any comments or questions. We can let you know of any updates if you are interested. Have a lovely day.

a. Below are some of changes made in the prototyping based on the usability inspection:

To start with, the first major change that we decided to make in the design of UVote app was to remove the bottom navigation menu. The main reason behind making this change was that UVote already bears a much better consistent, functional, and navigable menu, so implementing another bottom navigation bar with limited functionality does not make much sense. Another major reason for removing the bottom menu was that during the usability inspection phase of the development some users found it a bit purposeless as they didn't like the changing bottom menu bar with every screen. Last but not the least, the bottom bar menu was taking up more space on the screen, therefore leaving less space for the content that could lead to cluttered content. Although we removed the bottom menu, but it didn't affect the convenience of app as we still included home screen link as a shortcut in the relevant screens such as the voting and feedback submission confirmation screens.

Another key concern during usability inspection was that some users were not much clear on the functionality of virtual assistant function. Although users had the idea that this feature is for some sort of help but at the initial glimpse of the feature, they were not sure how this feature is going to help them. So, in order to make things clear, it was decided that it would be better if we include some kind of popup link/menu in the relevant screens that would list the functionality of virtual assistant. As a result, a popup link saying "*Need help? Try out Virtual assistant for finding your ideal candidate!*" was included in the relevant screens such as Candidate screen and Voting screen. By relevant screens, we mean the screens at which user is most likely to need the help of virtual assistant for deciding the ideal candidate.

Lastly, there were some other minor changes that were made during prototyping and one such change was to change the color scheme of UVote app as previously the dull red color was used but later it was concluded that the bright red color adheres better with the theme color of university and provides better visibility for white font. So, the color was changed from dull red to bright red based upon the above-mentioned considerations. Another minor change that is not visible in the prototypes is the auto-logout feature as some users suggested they would like a more convenient option to logout. So, we decided like many other renowned apps that whenever user closes the app, the app would automatically logout the user and would require the credentials upon opening the app again. This makes more sense because if we include a logout button as a shortcut in some screens, then the user would have to first logout and then close the app. Instead, the user can simply close the app without having to follow a bunch of steps.

b. Please refer to the attached bmp file for updated vertical prototyping file based upon the user inspection.

Below, we analyze the results of our usability inspection to check the overall effectiveness of our application so far and also to gauge the changes that can be made to improve the user experience - Qualitative results:

In our usability test process, we wanted to use the Qualitative data that we got from interview users based on their experience with our prototype to understand how effective our application has been so far, when it comes to performing the core tasks that we sought to make possible with this prototype. As such, we had our users test core functions such as viewing candidate information or casting vote to gauge how effective our application is and where improvements could be made to make the application more effective and easier to use for the users, falling in line with the design principles that we seek to follow.

The first task that we put forward for the users was to view candidates' information. All the users performed this task quickly with most of them having no trouble performing the main task. Most of them, however, did have a suggestion to include a shortcut to the page on the home screen itself to improve visibility. One user found the name and information mismatch to be confusing, which is understandable at this point as our application is still a prototype, not a finished product, with some of the features being placeholders for how our final product would work.

The second task involved the users checking out the "Key events/news" page. All the users performed this task quickly, having no issues with the functionality of the application at this point. One user did have a suggestion to include a shortcut to this page on the homepage as well, while another user felt that improvement could be made to the overall visibility of the page by including bullet points so that the user is able to distinguish between two different events.

The third task involved the users using our Virtual assistant that compares different candidates based on the user's requirements. All the users performed this task quickly but had a lot of problems here. They felt that the name of the feature could be changed in order to make it less confusing for the user and to give the user some form of an idea as to what this feature aims to do. Another user felt that this feature could be confusing for firsttime users and as such, there was a need to include some form of a tutorial in order to let the user know the main functionality of the virtual assistant instead of leaving the user to figure it out through trial-and-error. All of them felt that navigating to and from this page was easy.

The fourth task is casting a vote. According to the results of the usability test, this activity was completed by prospective users without any problems. The only stumble point here was that the prototype's "names" for candidates were ambiguous for some testers. This is not a real issue, but probably should be changed just to have a better testing experience. All the participants managed to finish the task quickly.

The fifth task is viewing election results. Most of the users fulfilled the task quickly, while a few had difficulties returning to the home screen after looking at the results. One of the participants suggested adding a shortcut to the home screen to ease navigation.

In the last task all the users were asked to submit a survey regarding their usage experience of the UVote app. Overall, most of the people finished the activity quickly. One of the users pointed out that stars for gauging the app were inactive (not clickable). In addition, there was a suggestion to have a text area in the survey so that users could give more extended opinions on their experience with UVote.

- Quantitative results: Summarize numerical data.

A measurement range during the usability tests was based on how quickly users were able to perform each task. In addition, number of errors during the “usage” was counted.

Task performance times summary:

Task	User 1	User 2	User 3	User 4	User 5	Average
1.View candidate info	2	2	2	3	2	2.2
2.View key events/news	3	3	3	2	2	2.6
3.Comparing candidates	3	3	2	2	2	2.4
4.Cast vote	3	3	2	2	2	2.4
5.View election results	3	3	3	3	2	2.8
6.Submit survey for feedback	2	3	2	2	2	2.2

According to the table above, “view candidate info” and “submit survey for feedback” were the two tasks, which took participants, on average, more time to complete.

“View election results” task took the least amount of time to finish.

Summary of number of errors for each task:

Task	User 1	User 2	User 3	User 4	User 5	Total number of errors
1. View candidate info	0	1 (couldn't find)	1 (cand. Nameinfo mismatch)	0	0	2
2. View key events/news	0	0	0	0	0	0
3. Comparing candidates	0	0	0	0	0	0
4. Cast vote	0	0	1 (confusing cand.names)	0	0	1
5. View election results	0	0	0	0	0	0
6. Submit survey for feedback	0	0	1 (can't click stars)	0	0	1

According to the table above, during the usability test, while performing “View candidate info” task, two errors were identified. This is the only task, which gained the biggest number of errors.

“Cast vote” and “Submit survey for feedback” are the tasks with the lowest number of errors (1).

During testing of the remaining tasks in the application, no problems were identified.

We also held a survey to get an idea of how the user experience is at this stage. All the users found our application to be extremely responsive and said that they were likely to recommend this application to a friend of theirs. The most important suggestion that we got was that we could make effort to revamp the home menu in order to make navigation to any desired page more effective.

• ***Discuss / interpret your results: prepare suggestions for further consideration of the design***

Problems with task 1: (took the most time to complete)

- a) couldn't find candidates' info - usability catastrophe - imperative to fix. One of the suggestions is to include a shortcut at the main page to make the option of viewing candidates' information more visible to users.
- b) mismatch of names with candidates' info brought confusion - minor usability problem – can wait to fix (is an example info as the prototype was used, will be changed anyways).

Problem with task 4: (was completed quickly)

- a) candidates' names brought confusion - minor usability problem – can wait to fix (is an example info, will be changed anyways).

Problem with task 6: (took the most time to complete)

- a) stars are not clickable – major problem (assumably acceptable for a semi-functional prototype) - will be fixed.

Suggestions of participants:

- a) some participants would like to see a shortcut for the home screen.
- b) renaming “Virtual Assistant” option to something appropriate like “Compare Candidates” is necessary to eliminate confusion on the purpose of the tab.
- c) events and news should use bullet points to visually separate them.
- d) pop up menu for virtual assistant would be an asset: on-line “tour” as a type of help would work.
- e) adding a text area for feedback option to get extended opinions.

According to the results, some errors which need to be fixed were identified. As a result, iteration on the design needs to be done. More attention should be paid to the task, which took most of the time for users to complete.

Below, we will share our overall experience with conducting the usability test:

Usability tests were conducted by our team to find out if the design of UVote up is learnable, efficient, memorable, and if all the expectations of users were met. This was an experimentation, which involved five prospective users trying to finish given tasks from start to finish. The interaction was observed, and all the users were encouraged to say what they think while trying to complete the tasks. During the test, conditions for all the participants were the same. The goal of the process was to find out how we can make our product better and which problems can be solved to make user experience successful.

During the test our focus was on how much time participants spend completing certain tasks and the number of errors identified. In addition, we conducted interaction logging to remember steps performed by the users.

Our tasks were created by identifying the end goals and important ones were selected. The process was centered around the tasks and ideas of participants were encouraged to be said.

After the usability testing our team conducted qualitative and quantitative analyses to summarize the results. Eventually, some errors in the app were identified and suggestions for necessary corrections were made.

Discovery of errors was the starting point on altering the existing design of the application. The most important thing is that all the suggestions and decisions regarding alteration of the design at this stage were made solely based on the prospective users' input during usability testing.

Moving forward, in newer iterations, we would try to refine the experience of the users by building upon the foundation laid so far. It would be important to make sure that we do not make any changes that either deteriorate user experience or make the app seem alien to users. We would also make sure that any changes made to refine and improve user experience align with the design principles that we held throughout the making of the prototype.

We also felt that we could have done a better job at letting the user know what features of our application so far are placeholders, that is, they are there just to give the user an overall idea of how we have envisioned our application to be, and some of the features may not function right now.

Appendix:

User 1

Usability Testing Feedback

0: Fail

1: Succeed Very slowly

2: Succeed a little quickly

3: Succeed quickly

Task	No of errors	Time to Complete	Additional suggestions/findings
View Candidate Info	0	2	According to user, it would be better if we also include candidate's info link at the home screen.
View key events/news	0	3	User would like to see some kind of shortcut for home screen instead of accessing it from nav. Menu.
Test Virtual assistant for comparing Candidates. Any thoughts on the popup link included for highlighting the functionality of virtual assistant?	0	3	User found the popup link useful and helpful.
Cast vote	0	3	No problems at all.
View Election Results	0	3	User wants home screen shortcut after he/she is done with viewing results.
Submit survey for feedback.	0	2	No problems at all.

To conclude, overall user found the app very convenient, simple, and efficient. User was able to achieve all the required tasks pretty quickly and efficiently without any lags or confusion. User liked the idea and user interface of UVote app however there were some moments when user suggested some changes. For example, when user was asked to view the candidate's information just after logging in user was searching for candidates' info's shortcut on the home screen as user thought that it is the key feature so it should be on the home screen.

Another key finding during usability testing was that user said he would like to see some kind of shortcut for home screen throughout the app so that he does not have to access navigation menu for that.

User 2

Usability Testing Feedback

0: Fail

1: Succeed Very slowly

2: Succeed a little quickly

3: Succeed quickly

Task	No of errors	Time to Complete	Additional suggestions/findings
View Candidate Info	1	2	User was bit confused where to find this. User was searching for it on the home screen.
View key events/news	0	3	No issues with this screen
Test Virtual assistant for comparing Candidates. Any thoughts on the popup link included for highlighting the functionality of virtual assistant?	0	3	User said that virtual assistant does not seem the appropriate name for the feature. User also suggested that link highlighting the key functionality of virtual assistant would be good.
Cast vote	0	3	Easily casted the vote.
View Election Results	0	3	Easily viewed the election results.
Submit survey for feedback.	0	3	Easily submitted the feedback.

To conclude, overall user found the app very convenient, simple, and efficient. User was able to achieve all the required tasks pretty quickly and efficiently without any lags or confusion except the viewing candidate's information function. During the testing of candidate's information feature, user tried to look for the feature at the home screen and when user didn't find it in the home screen, user made an error by clicking on the vote feature. All the other tasks went smooth and relatively fast without any difficulty.

Another key finding during usability testing was that user prefers the name of virtual assistant feature to be something appropriate that directly explains the role of virtual assistant menu. Lastly, user said that it would be better if he/she can access the home screen directly as a shortcut without having to go to navigation menu . It would reduce the need of going back and forth.

User 3

Usability Testing Feedback

0: Fail

1: Succeed Very slowly

2: Succeed a little quickly

3: Succeed quickly

Task	No of errors	Time to Complete	Additional suggestions/findings
View Candidate Info	1	2	"At a glance" on main menu made sense because if "candidates info" is not used as frequently, this option is alright to be placed in the navigation menu. User had found navigation menu after looking through "at a glance" The candidate name did not match the candidate info which was a bit confusing to user but was decided was not required for this level of prototype.
View key events/news	0	3	Bullet points for upcoming events, as the user wasn't sure if events were separate. No issues getting to this screen and selecting an event.
Test Virtual assistant for comparing Candidates. Any thoughts on the popup link included for highlighting the functionality of virtual assistant?	0	2	Names didn't line up with candidates. No drop down menu. Pop up for virtual assistant is required, "virtual assistant is a bit ambiguous term so a pop up may help new users understand the functionality". Navigation from virtual assistant to voting was easy to understand as everything is done through the navigation menu.

Cast vote	1	2	Candidate A, B and C should be actual names in the final prototype to better understand the finished version – just a suggestion.
View Election Results	0	3	
Submit survey for feedback.	1	2	Can't click on stars for the feedback form. Being able to enter text in the survey form may be helpful to provide a more finished prototype.

To conclude, user thought the navigation menu was helpful and easy to navigate. Some user suggestions were brought up regarding functionality that was not required for this stage of prototype yet were included for future development. The user had no trouble understanding and operating our prototype. The user agreed that a pop up screen would be helpful in understanding the virtual assistant yet had no issues with our current state. The suggested changing the name of virtual assistant in order to better align with it's function.

User 4

Usability Testing Feedback

0: Fail

1: Succeed Very slowly

2: Succeed a little quickly

3: Succeed quickly

Task	No of errors	Time to Complete	Additional suggestions/findings
View Candidate Info	0	3	No problems with this screen
View key events/news	0	2	No issues with this screen
Test Virtual assistant for comparing Candidates. Any thoughts on the popup link included for highlighting the functionality of virtual assistant?	0	2	The user would like the virtual assistant option to be renamed to 'Compare Candidates'
Cast vote	0	2	Fairly completed.

View Election Results	0	3	Users face difficulty in returning to home screen after viewing results.
Submit survey for feedback.	0	2	No issues

To conclude, the user found the app easy going and loved the concept as well. The user was able to accomplish all the tasks without any trouble. During the testing, the user had a few suggestions based on his navigation experience. The user reckons that the 'virtual assistant' option be renamed as 'compare candidates'. Also, he found it difficult to go back to the home screen after viewing election results. Hence, he wanted that navigation to be easier.

User 5

Usability Testing Feedback

0: Fail

1: Succeed Very slowly

2: Succeed a little quickly

3: Succeed quickly

Task	No of errors	Time to Complete	Additional suggestions/findings
View Candidate Info	0	2	Easily completed task.
View key events/news	0	2	User wanted a better line up for events.
Test Virtual assistant for comparing Candidates. Any thoughts on the popup link included for highlighting the functionality of virtual assistant?	0	2	Found this feature useful.
Cast vote	0	2	No problems.
View Election Results	0	2	Complained about not being able to go back to home screen easily.
Submit survey for feedback.	0	2	Liked this feature.

To conclude, the user enjoyed working with our app and did find the concept unique. There were just some minor changes that he suggested.

Survey:

App Satisfaction Survey

This survey is intended to get your feedback on our Uvote app. Please note that this survey is for educational purposes and all information stays confidential.

htd.nintendo@gmail.com [Switch accounts](#)



*Required

Email *

Your email address

How likely is it that you would recommend this app to a friend or other students?

*

Not at all likely 1 2 3 4 5 Extremely likely

☐ ☐ ☐ ☐ ☐

How would you rate the navigation of the app? *

- ☐ Very Easy
- ☐ Easy
- ☐ Neither easy nor difficult
- ☐ Difficult
- ☐ Very difficult

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Overall how satisfied are you with the app? *

- ☐ Outstanding
- ☐ Liked it
- ☐ Neutral
- ☐ Somewhat okay
- ☐ Not Impressed

Which of the following would you use to describe our app? Select all that apply. *

- ☐ Useful
- ☐ Unique
- ☐ Reliable
- ☐ Easy to use
- ☐ Impractical
- ☐ Confusing
- ☐ Unreliable
- ☐ Cluttered

How well does our app meet the goals? *

- ☐ A great deal
- ☐ A lot
- ☐ A moderate amount
- ☐ A little
- ☐ None at all

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How responsive have we been to your questions or concerns about our app? *

- ☐ Extremely responsive
- ☐ Very responsive
- ☐ Somewhat responsive
- ☐ Not so responsive
- ☐ Not at all responsive

Do you have any other comments, questions, or concerns?

Your answer

Submit

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Survey results are included in the csv file.