

Usability Testing

Introduction

Notelass is a note taking application that integrates with the LMS software 'Compass' commonly used among Australian secondary schools and students. The application allows students to take notes in class using markdown syntax and the LaTeX notation language within a real time WYSIWYG editor linked to each lesson instance within compass for easy organisation. Notelass additionally features tools for viewing class resources, upcoming tasks and a calendar of the users lessons.

As the user base of Compass and inherently Notelass is primarily composed of secondary school students the usability testing has been conducted on three students currently using compass with varying levels of self recognized technical literacy in order to cover the widest range of potential end users. To gather data from this testing observed completion of task and a short questionnaire have been utilized to time the execution of tasks, monitor user errors, judge perceived difficulty and measure user satisfaction with the application.

Demographic

Tests were conducted on three fellow students with no prior knowledge of the application or its development, selected after a brief interview of their technical literacy and current note taking methodology. The tests were conducted within ten minute blocks individually within a quiet library space to allow for thorough observation and without assistance from other users.

Throughout the testing the participating users are referred to by their self recognized skill level, frequency of Compass use and current note taking methods:

| Name | Technical Literacy | Current Note Taking | Use of Compass |
|---------------|--|--|---|
| Amateur User | Rarely uses laptop or computer outside of school and mostly exclusively for web browsing and social media. | Mostly pen and paper note taking, however occasionally uses google docs to take notes. | Basic viewing of lesson plans, uploading assignments and access of class resources |
| Novice User | Daily use of personal laptop or computer and self proclaimed proficient in Microsoft office word. | Recently adopted Obsidian as a note taking application (markdown WYSIWYG editor). | Often use of Compass website and mobile application for schedule, assignments and class information |
| Advanced User | Daily drives Debian based operating system for 4 years, | Uses LaTeX language to generate PDF notes | Only uses compass website for assignment submission |

| Name | Technical Literacy | Current Note Taking | Use of Compass |
|------|--|---------------------------|---|
| | casually develops programs with python and takes software development VCE subject. | from the Vi / Vim editor. | and access to class resources, uses synced calendar to access schedule. |

Tasks

All participants were required to complete the following tasks representative of Notelass' core functionality and user interface throughout their usability testing:

- [1] Login to Notelass using your session id from compass
- [2] Open a new note for a lesson in your schedule from one week ago
- [3] Write a note with two types of headings, a list and if familiar a latex equation
- [4] View the selected lesson's associated lesson plan side by side to the editor
- [5] Navigate to the home page before re-opening the previous note
- [6] Delete the previously created note

After observed completion / attempt of each of the outlined tasks the participant was required to complete a questionnaire with a multiple choice question about the difficulty of each task, an overall satisfaction score out of 10 for the applications usability and a written section for any addition feedback. The difficulty options provided were as follows:

- Easy (1)
- Moderate (2)
- Challenging (3)
- Difficult (4)
- Hard (5)

Results

* indicates did not finish

Difficulty

| Task # | 1 | 2 | 3 | 4 | 5 | 6 |
|----------|----|---|----|---|---|---|
| Amateur | 3 | 2 | 4* | 1 | 2 | 2 |
| Novice | 5* | 1 | 3* | 1 | 1 | 1 |
| Advanced | 1 | 2 | 2 | 1 | 1 | 2 |

| Task # | 1 | 2 | 3 | 4 | 5 | 6 |
|--------|-------------|----------|-------------|------|------|----------|
| Mean | 3 | 1.67 | 3 | 1 | 1.34 | 1.67 |
| Rating | Challenging | Moderate | Challenging | Easy | Easy | Moderate |

Overall the most difficult task for users to complete was the sign in with a session id as most users would not be familiar with the process of getting a session id from a websites cookies. The Novice user did require some assistance to complete this task in order to complete the remaining testing. Additionally the rating for the note styling task was quite high as all besides the advanced user were not familiar with the LaTeX language and had to skit over that section of the task. These indicated that further tool tips and instructions will be required within the applications user interface.

Time Taken

| Task # | 1 | 2 | 3 | 4 | 5 | 6 |
|----------|--------|--------|--------|----|-------|-----|
| Amateur | 53s | 29s | 95s* | 5s | 22s | 34s |
| Novice | 114s* | 22s | 63s* | 7s | 14s | 15s |
| Advanced | 24s | 32s | 41s | 3s | 16s | 29s |
| Mean | 63.67s | 27.67s | 66.34s | 5s | 17.34 | 26 |

The time taken on the first task further reinforces the need to add some extra instruction to this step as indicated from the mean although two of the three users were able to complete the task it still required an average of 63.67 seconds to figure out. Besides this the rest of the time recorded for each task across the board shows the application being fast and simple to use in accordance with the project requirements.

Observations

Amateur User

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|--|---|---|
| took a short time to understand what the input field required but was able to locate the session id on their own and submit the login form, this is potentially the case from | user took some time navigating through their daily schedule to find a class to open a new note for, but knew how to navigate through dates. | User used the format and styling menus to write their notes as these are common controls for any rich text editor, however was not able to complete the | User quickly identified the button to show the lesson plan and demonstrated toggling it on and off | User intuitively understood the navigation required to complete the task but took some extra time due to slow movements | the user took some time looking around the menus, glossing over the delete button multiple times before finally |

| 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|---|------------------------|---|---|-------------------|
| their heavy browser use. | | LaTeX part of the task | | | deleting the note |

Novice User

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|--|---|--|
| user was not able to complete the task on their own after 90s and required assistance with the login process to continue with testing | user took some time navigating through their daily schedule to find a class to open a new note for, but knew how to navigate through dates. | User understood the common markdown syntax and easily created all the styled and formatted text, however they attempted the markdown equation but was not familiar with the language. | User quickly identified the button to show the lesson plan and demonstrated toggling it on and off | User quickly understood the task and navigated between the home screen and the task on the recently opened side panel | User took some time looking through the sidebar before actually completing the task in a timely manner |

Advanced User

| 1 | 2 | 3 | 4 | 5 | 6 |
|--|---|--|--|--|--|
| user immediately understood the required input for login and fetched their session id from compass to fill out the form. | user took some time navigating through their daily schedule to find a class to open a new note for, but knew how to navigate through dates. | user initially attempted to format their note entirely in LaTeX (due to their current method of note taking) but quickly realized the limitations of its implementation and completed the rest of the task with markdown | User quickly identified the button to show the lesson plan and demonstrated toggling it on and off | User quickly understood the task and navigated between the home screen and the task in the home page | User initially look at the navigation bar for the file management menu, however quickly realized the correct menu and button |

Satisfaction

| User | Satisfaction | Feedback |
|---------|--------------|--|
| Amateur | 7 | The Notelass has a nice design and worked fine once i was logged in but the way of logging in wasn't very easy and the Maths stuff in notes didn't make much sense but I wouldn't personally use it anyways. |
| Novice | 9 | I couldn't figure out the sign in, but I'm sure that can be fixed with some instructions. The actual note taking was super familiar to what I currently |

| User | Satisfaction | Feedback |
|----------|--------------|--|
| | | use and the integration with Compass was very useful. |
| Advanced | 8 | The websites session id login works great as a way to protect user credentials, the integration for compass is seamless and everything loads very fast. I appreciate the support for markdown and LaTeX in notes, but i wish there was some form of key-binds to speed up my workflow. |
| Mean | 8 | - |

Conclusion

Over the usability testing resulted in a majority of positive feedback, however the data collected in the study clearly indicated which parts of the applications core functionality needs improvement, primarily in the form of further user documentation and tool tips. Specifically from the data it can be concluded that the development of short guide detailing the usage of a session id to login will be required before the application can be used in a production environment. One standout from the user feedback was the addition of key binds within the editor for formatting and managing notes, as this change may make the editor more intuitive to a broader range of users who have experience using applications with a heavy focus on this workflow.