

Usability Testing Plan

- Piazza

CPSC 481 Team I Fall 2020

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Background Of Usability Study

Choice of Background InformationSystem

We picked the *Piazza* web application to do our usability test on.

We picked it because it's an application that is not popular among the general public and therefore has not had very extensive usability testing performed on it. We have also experienced some issues with using the application, which lead us to believe that this application has usability issues. Piazza also supports a relatively wide variety of features, which means that it is more likely to present usability issues in at least a subset of those features.

Background Information

Summary of Testing

1. Piazza is a web application designed for university students and professors to assist with class work in a discussion forum format.
2. Students can ask questions and have the ability to highlight their questions based on urgency and need for immediate action.
3. Piazza is very helpful for students in a Computer Science Field as it allows users to format and add code syntax for specific questions related to programming and bugs.

Equipment information

1. Equipements used for the usability would be a computer and a web browser. We would also use a screen recording software and web camera.



Description of Concerns

1. When filtering a search, Piazza adds a block with the filter name underneath the search bar, which you need to remove to get out of the search results list. However, this is not intuitive because of the way the original search is implemented - it's a regular search bar and has no mention of filtering, which makes the filter option to get out of the search results, inconsistent and therefore unintuitive.
2. Making a new post requires having read all of the items on the reading list. It says this in an error notice at the top of the post screen, which is hard to notice. A user might complete their post before seeing it, and then have to go back to read the items on the reading list when notified of this restriction when trying to make a post.
3. I am notified of having required items on my reading list, but it is not clear from the suggested reading list search results which of those items are actually on the reading list because all items in the search result list are marked as "reading list", but not all of them are the required ones it is looking for.

Methodology

Testing Sessions

We will test piazza by performing the selected tasks and explain how you plan to conduct the testing by describing the testing sessions from beginning to end.

Concerns

List of concerns that we have about piazza

1. Unable to make new posts
2. Irritating/cliche UI

Tasks

List of tasks that will be included in testing piazza

1. Read a discussion
2. Make a post (for everyone, only instructor(s))
3. Make a comment on a post
4. Search posts

Scripts

1. Log in
2. Select your class or make sure you're in your class

--- task 1 – search for post -----

3. Search for “New COVID-19 Sign” in the search bar

-- task 2 – read a post -----

4. Select the post to open it
5. Fill out Q1: Who think this is a good post
6. Fill out Q2: What is the content of the comment by Cody Clark on this post

--- task 3 – comment on a post ---

7. Make a comment on this post, saying “Great post!”

--- task 4 – create a new post -----

8. Clear the search
9. Create a new post for everyone
10. Put “Test” as the summary of this post
11. Put “Testing the usability of Piazza for CPSC 481” in the content of the post
12. Make this post into a Note
13. Make the post visible to everyone
14. Copy the contents of the red bar at the top of the screen, if you see it (you may not see it, this is fine) and fill out Q3
15. Click to post the post
16. View your post
17. Fill out Q4: what is the content of your post

18. Fill out the post-session survey

Participants

Name	Experience with Piazza
Ejaaz	Never used/new user
Ana	Occasional user
Perjot	Occasional user
Ali	Heavy user
Max	Heavy user

Protocol

We chose the think aloud protocol.

Think-aloud protocol

As participants complete a task, you ask them to report

- what they are thinking
- what they are feeling
- rationale for their actions and decisions

Idea: rather than interpret their actions/lack of action, you can actually understand why they are doing what they are doing



Data analysis

Metrics and Measurements

Metrics

Three metrics we picked:

1. Likes, dislikes and recommendations
2. Error-Free Rate and time
3. Successful Task Completion

Metrics measuring

How we plan to measure these metrics:

1. Survey to collect for Likes, dislikes, and recommendations
2. Keep track of the number of errors the user makes throughout the completion of their script and whether the error was critical or not
3. Keep track of the number of tasks successfully completed, and the number of tasks not completed
4. Measure the amount of time it takes for a user to complete each task
5. Questionnaire that would ask the participants to copy-paste a portion of the UI while they are completing their task (at least two per task to measure which portion of the task they were able to complete) .

Making Sense of Data

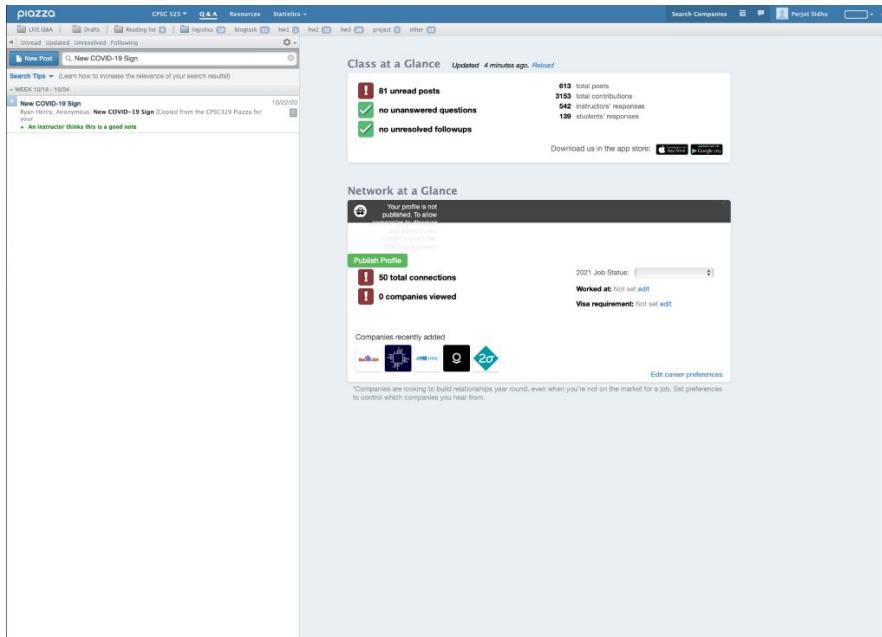
Data analysis

Methods of analyzing and making sense of our data:

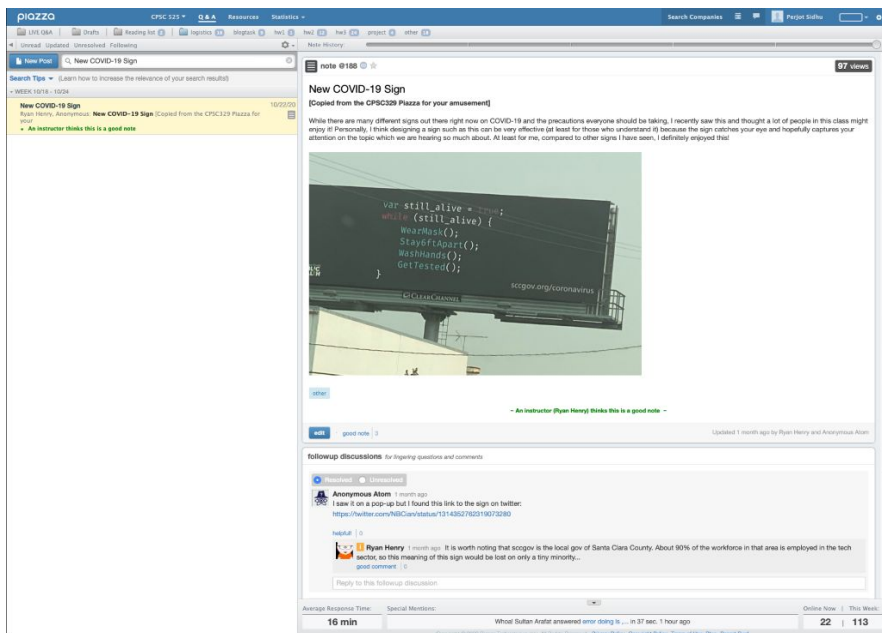
1. Get visuals from the questionnaires (bar graphs or pie charts)
2. Compute the error-free rate per participant from the number of tasks successfully completed and not completed
3. Compute the overall error-free rate by averaging the error-free rate gotten from each participant
4. Calculate the average task completion time per user
5. Calculate the average task completion time per task among all users
6. Rank all recommendations, likes, and dislikes by combining similar ones together and giving each recommendation/like/dislike a value (up to 5) based on how many users came up with the same recommendation/like/dislike. List the recommendations/likes/dislikes in order from highest value to lowest value to rank them.

Appendix

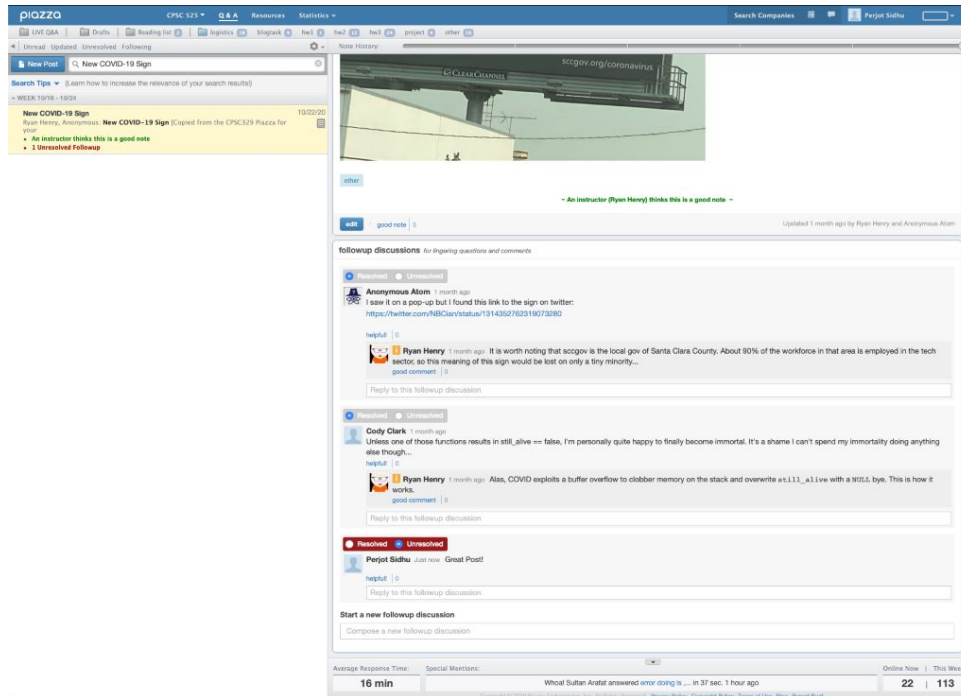
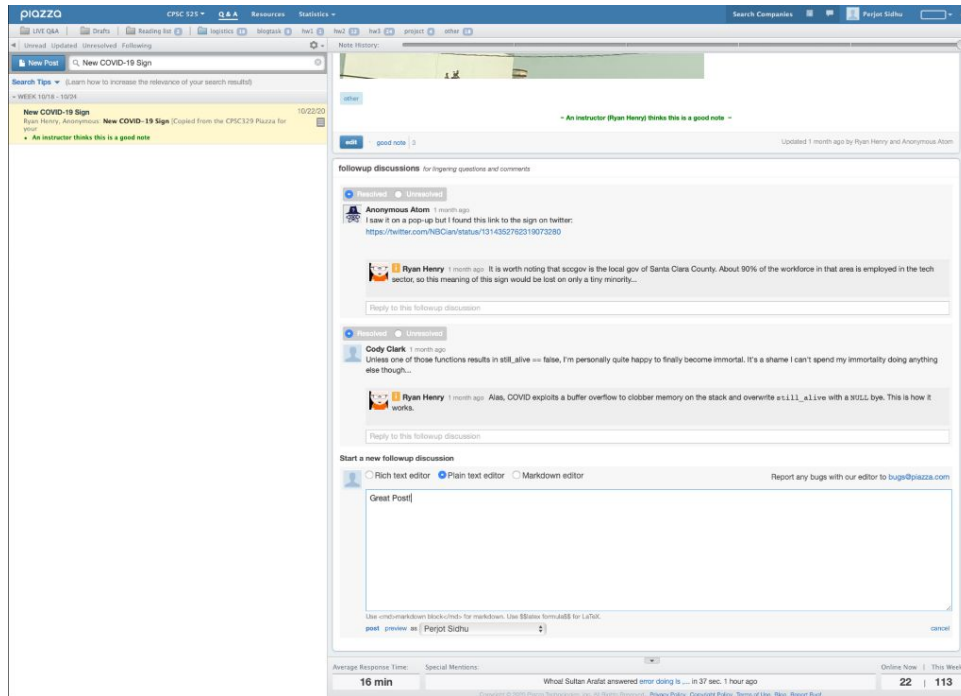
TASK 1: Sample screenshot

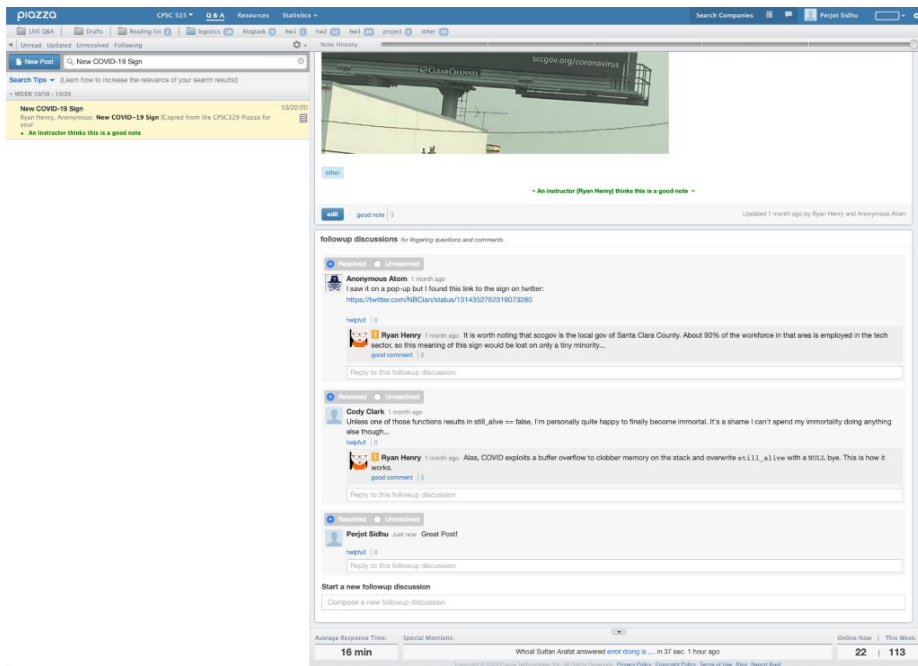


TASK 2: Sample screenshot

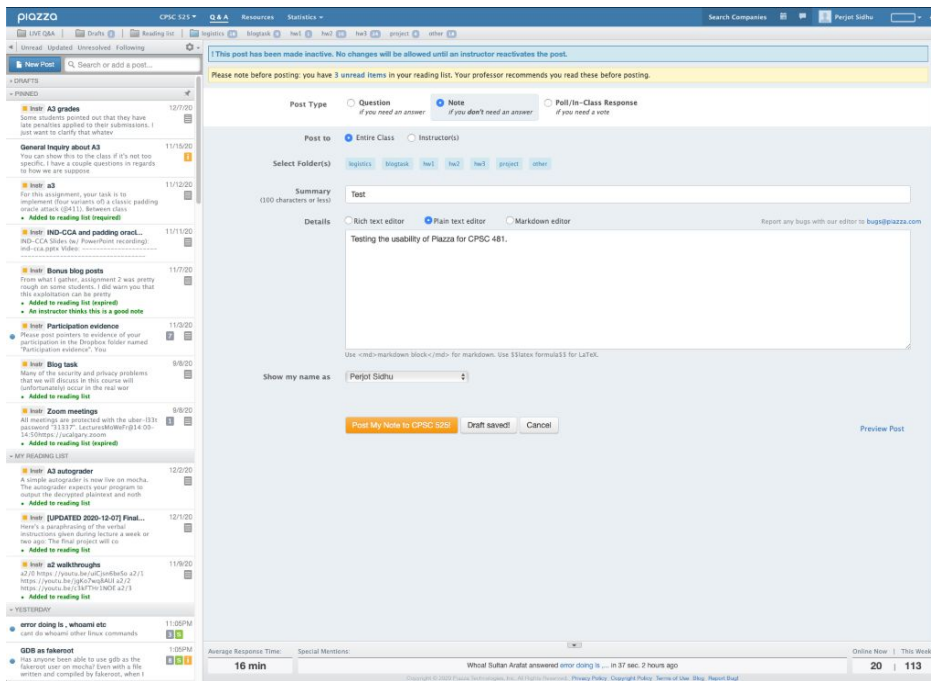


TASK 3: Sample screenshots





TASK 4: Sample screenshots



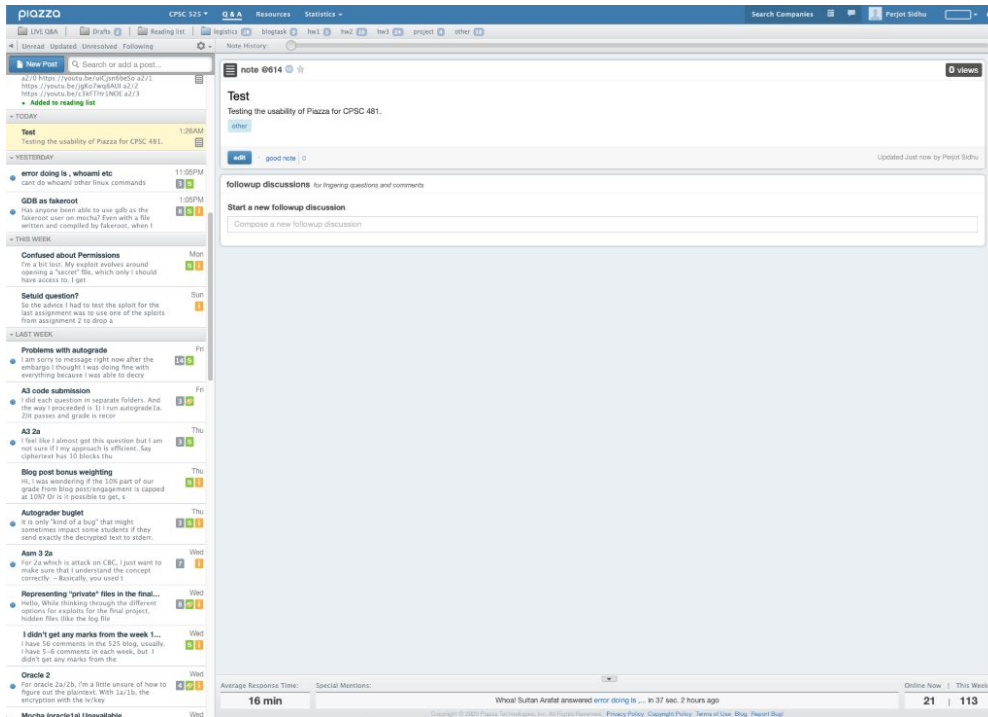


Table 1: Task Completion Time Per Participant for Each Task (Successful Task Completion)

	Ali	Ana	Ejaaz	Max	Perjot	Average
Task #1	3m	2m	3m	4m	2m	2.8m
Task #2	12m	14m	13m	15m	15m	13.8m
Task #3	13m	11m	7m	12m	4m	9.4m
Task #4	15m	--	--	17m	9m	13.67m

Table 2: Number of Errors Encountered Per Participant for Each Task

	Ali	Ana	Ejaaz	Max	Perjot
Task #1	0	0	0	1	0
Task #2	0	0	0	0	0
Task #3	0	0	0	0	0
Task #4	0	1	1	1	2

In task 1, Max made a typo while searching for the post; it was a non-critical error.

Ana, Ejaaz, Max and Perjot encountered the same error during task 4, they had not read all the posts required to make a new post. Max and Perjot were able to get around this by locating and reading the required post; Ana and Ejaaz were unable to do so thus this became a critical error for them.

Table 3: The Duration of Time Elapsed Before an Error Occurred Per Participant for Each Task (The Average Duration if Multiple Errors)

	Ali	Ana	Ejaaz	Max	<u>Perjot</u>	Average
Task #1	--	--	--	1m	--	1s
Task #2	--	--	--	--	--	--
Task #3	--	--	--	--	--	--
Task #4	--	3m	--	12m	3m	6m

Error-Free Rate Per Participant:

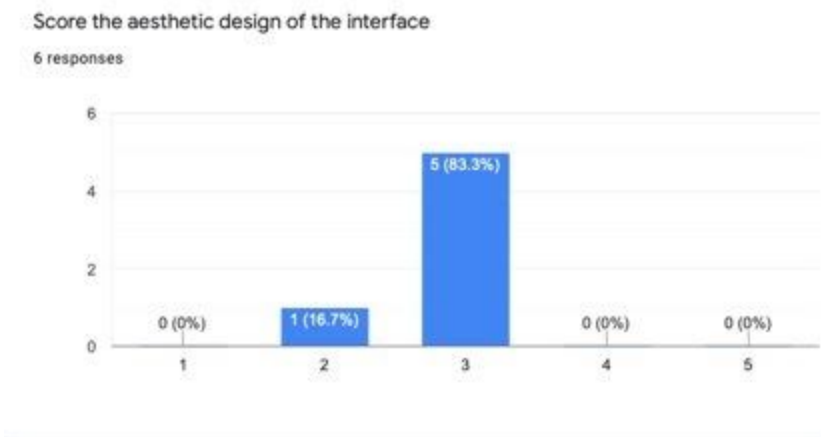
Ali: 100%, Ana: 75%, Ejaaz: 45%, Max: 50%, Perjot: 75%

Overall: 80%

Average Task Completion Time Per Participant:

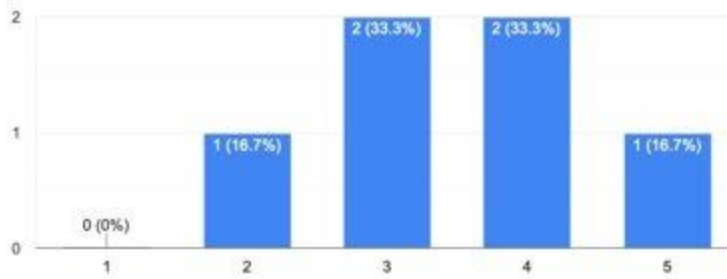
Ali: 10.75m, Ana: 9m, Ejaaz: 7.67m, Max: 12m, Perjot: 7.5m

Survey Response Graphs



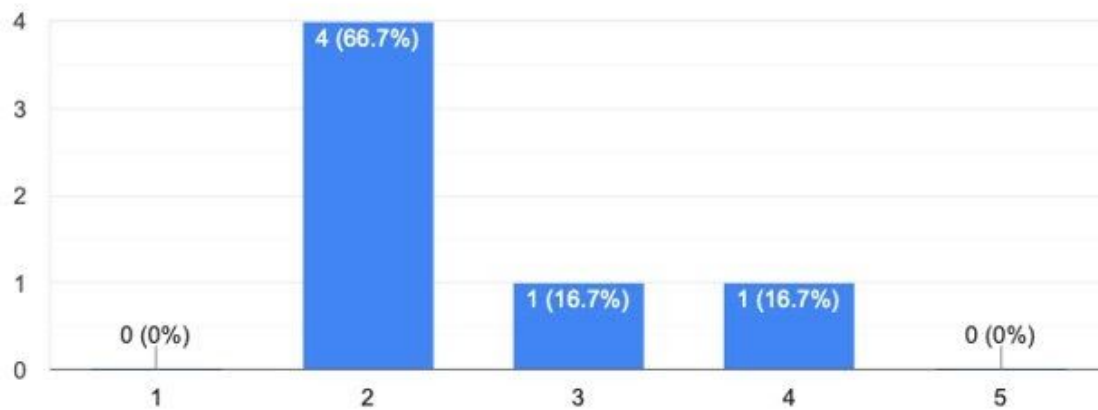
Score how easily you were able to find the information to copy-paste into the answers above

6 responses



How satisfied are you with the overall experience of using Piazza during your session?

6 responses



Liked Feature	Rating
Discussion forum	2
Custom voting polls	1
Search system	1
Ease of navigation	1

Disliked Feature	Rating
Bland look of UI	3
Unclear what posts are read/unread/resolved/unresolved	3
Unable to make a post	2
Crowding of UI makes it <u>confusing</u>	2
Too many notifications	1
Unable to detect notifications	1

Recommendation	Rating
More attractive UI design	3
Color customization option	1
Fix requirement for reading required posts before posting	1
Use colors to indicate marked as read	1
Make font larger or more spaced out	1
Make UI widgets more spaced out	1
Improve discoverability of UI	1

Originals:

Post-session Survey

Score the aesthetic design of the interface

1

2

3

4

5

☐

☐

☐

☐

☐

Score how easily you were able to find the information to copy-paste into the answers above

1

2

3

4

5

☐

☐

☐

☐

☐

How satisfied are you with the overall experience of using Piazza during your session?

1

2

3

4

5

Very dissatisfied

☐

☐

☐

☐

☐

Very satisfied

Piazza Usability Questionnaire

Complete the following questions while performing your testing tasks

Who thinks this is a good post?

Your answer

What is the content of the comment by Cody Clark?

Your answer

What is the content of the red bar at the top of your post-making window (if any)?

Your answer

What is the content of your post (when viewing it)?

Your answer

What did you like about Piazza?

Your answer

What did you dislike about Piazza?

Your answer

Please provide a recommendation for improving Piazza

Your answer

What did you like about Piazza?

4 responses

That it's a stack-overflow-style forum discussion

Class wide customized voting polls, and categorization of the discussions.

It's not so much a "like", more or less an "acceptance." Because it's a standard that many of my courses use. Though the search function (while in my opinion, is not visually intuitive) does however appear to contain a relatively good search system.

I like the simplicity and ease-of-use of the UI, everything is easily accessible.

What did you dislike about Piazza?

4 responses

That I couldn't make a post... It's very confusing what they want me to do to be able to make a post. Also, the style of the interface isn't very modern-looking, which makes in unappealing.

Spam notifications on startup of account with default settings. Unclear what is read/unread, resolved and unresolved.

It's UI is extremely bland and not-eye catching. It just feels like everything is crowded together even despite it taking up my whole monitor. Also certain aspects or notifications are near impossible to detect. It's really tough to notice when something has changed (E.g. new comment in post, or knowing is a post has already been read.)

Due to the numerous features the UI can be a bit confusing at times, especially for new users; it is also very bland and uninteresting.



Please provide a recommendation for improving Piazza

4 responses

Fix the requirement for reading posts from the reading list to make a post. This functionality seems broken. I check all the posts as read, but still get the notification telling me to read the posts.

I think Piazza needs a better and more aesthetic design. Also a more user-friendly UI design would help confused beginnners.

I would start by improving the aesthetic appearance (colors mostly), but I would also free out certain parts of the UI and make it more open. I would start with the tabs menu on the top just below the blue bar. I would suggest either making the words bigger or spreading them out further. Also certain functions like "mark as read" need to be made more clear, I would suggest using colors to indicate which posts have been marked and which ones haven't.

Piazza would benefit from having a more attractive, discoverable and organised UI. It could also have more customization options, the user is only able to change the colour of the UI.

