Evaluation Plan

Gaining insight into user satisfaction and quiz performance

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1 Population

USF Students will be the desirable targets for our study, this is due to their familiarity with the current system Canvas, and its quiz-taking system. USF uses the canvas platform for conducting online exams. So, Students are familiar with the functionalities and problems associated with the present canvas examination system. As our application is built upon the current canvas system by solving some of its problems USF students can provide valuable feedback and evaluation.

Every student is a potential end-user of our application. As a result, we are selecting participants using the Convenience Sampling technique. We intend to recruit students visiting campus buildings such as the library and classmates. For the evaluation there will need to be at least 15 participants recruited, we intend to approach these individuals in person and give an overview of our study, if the individual has agreed to participate, we will collect their preferred contact information and schedule a time to conduct the evaluation or can conduct the evaluation at that moment if preferred. Since undergraduate students take tests more frequently than graduates and are more familiar with the current online examination system, we try to give them priority in this study. We intend to include members of other teams in the study to get different insights.

2 Hypotheses

2.1.1 Primary Hypotheses

Our primary hypothesis is as follows: allowing the user to continue working on a quiz uninterrupted when losing internet connection will reduce the emotional impacts of this time-sensitive task, resulting in higher user satisfaction. In other words, our online quiz system will lead to reduced anxiety and uneasiness in users when they are taking an online quiz when compared to users of quiz systems without these features.

2.1.2 Primary Null Hypotheses

Our primary null hypothesis is as follows: allowing the user to continue working on a quiz uninterrupted when losing internet does not have any effect on their emotional states and will result in no or negligible changes in user satisfaction.

2.1.3 Secondary Hypotheses

Our secondary hypotheses are 1) that users will find the feedback and notification system from our online quiz system more informative than that of the baseline system and 2) that users will find our quiz system more durable than that of the baseline system (a type of usability improvement.)

2.1.4 Secondary Null Hypotheses

The null hypotheses for our secondary hypotheses are 1) users will not notice/not find our online quiz system to be more informative than the baseline, and 2) users will not notice/not find our system to be more durable (therefore in some modality, more usable) than the baseline system.

3 Study Conditions

The study conducted will be performed in a non-experimental fashion due to not having random assignments, and no multiple groups or measures are being studied. To investigate the independent variables of the study, the within-group design approach will be utilized. There will be a single group with no division of the groups and each participant will interact with both the current solution and the new solution being evaluated. This approach was chosen due to the small number of subjects participating in the study and allows the participants to interact with both systems to compare the differences. Additionally, we propose that fatigue and its impact on the user will be low due to our setting of a time limit on each interaction where each quiz will allow a maximum duration of five minutes. There is a low concern regarding learning effects since interactions with the interface will be significantly different where a user can continue taking a quiz uninterrupted versus the quiz being paused.

4 Methods

4.1 Participant Procedure

For our evaluation method, participants will be provided with an URL with which they can visit our developed interface page. From there, participants can take the quiz. They will have to take the quiz twice. In our system, we have kept both the current solution and the proposed solution. By taking the quiz twice, we will make sure that participants will take the test in traditional mode as well as our currently proposed mode. This is the first part of what our participants need to do. While taking the quiz, we simulated the offline mode which the participants will face. In the current solution, the participants will wait until the connection is restored whereas participants can smoothly take the quiz without any issue in our proposed system when they are disconnected to internet. After they have taking each quiz, they will be asked some questions regarding the quiz-taking experience for the qualitative analysis.

4.2 Equipment

The participants will only need a computer with an internet connection to access the URL they will be provided with. For our evaluation, we will store the data such as the time taken by participants to take each type of quiz in the background.

For the questionaries, we plan to do it virtually. We can use MS Teams for that. Depending on the situation, we may record the session. We will ask them some questions and record their responses. So, only a computer or even a mobile phone with an internet connection with MS Teams installed will be enough for our evaluation.

4.3 Location

Participants can take part in the survey remotely. We will reach the participants by means of email. With the provided link, participants will take the quiz remotely from their homes. Once their quizzes are taken, we will ask them some questions virtually. So, participants can join us remotely. In case any participant does not prefer to do it virtually we will try to conduct the study at the USF campus.

4.4 Time

Since each participant will take two quizzes which are of 5 minutes each. So, with the break in the middle, it will take at best 12 minutes to take two quizzes. After that, we will be questioning them their experience with the quiz taking for 2-3 minutes. So, it will take a total of 15-20 minutes including the break for each participant to complete the study.

5 Metrics

5.1 Primary metrics

These metrics are calculated for each version of the quiz.

1. Quiz Responses: number of people who have completed the quiz
2. Time to complete the quiz.
3. Completion Rate: percentage of people who have engaged with the quiz and submitted it.
4. Satisfaction on Likert scale (1-2-3-4-5)

5.2 Secondary metrics

These metrics are calculated for each version of the quiz.

1. User behavior- Comments of people on whether they felt anxious when the connection was lost.
2. User comments- Comments on the interface and overall offline submission system.
3. User complaints- Comments about any frustration caused while giving the quiz.

After successful completion of each quiz, the participants will be handed over a link for a questionnaire that includes the following questions

1. Were you able to complete the quiz within the time limit? (yes/no)
2. Did any circumstances impact your ability to complete the quiz to the best of your ability?
3. Were you able to continue taking the quiz when an internet disconnection occurred?
4. Were you immediately notified when an internet disconnection occurred?
5. You felt any degree of anxiety or frustration the internet connection was lost (Likert Scale)
6. You felt that there might not be enough time to complete the quiz due to the simulated technical issue? (Likert Scale)
7. The quiz system provided useful notifications when the internet connection was lost. (Likert Scale)
8. Did you lose any time on the quiz from the disconnection? If yes, do you feel that impacted your score and why?
9. Regarding how the quiz handled internet disconnections. How satisfied were you with the quiz system (Likert)
10. Please comment on the interface and handling of the proposed solution when the connection was lost.
11. Any complaints that you may feel worth mentioning?