

**[Student Enrollment]**

## **Usability Test Plan**

**[2.0]**

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## Document Overview

This document describes a test plan for conducting a usability test during the development of **the Student Enrollment Service**. The goals of usability testing include establishing a baseline of user performance, establishing and validating user performance measures, and identifying potential design concerns to be addressed in order to improve the efficiency, productivity, and end-user satisfaction.

The usability test objectives are:

- To determine design inconsistencies and usability problem areas within the user interface and content areas. Potential sources of error may include:
  - Navigation errors – failure to locate functions, excessive keystrokes to complete a function, failure to follow recommended screen flow.
  - Presentation errors – failure to locate and properly act upon desired information in screens, selection errors due to labeling ambiguities.
  - Control usage problems – improper toolbar or entry field usage.
- Exercise the application or web site under controlled test conditions with representative users. Data will be used to assess whether usability goals regarding an effective, efficient, and well-received user interface have been achieved.
- Establish baseline user performance and user-satisfaction levels of the user interface for future usability evaluations.

The user group for this application, is for, to put it simply, other programmers. Our targeted user group is solely programmers to try to give new coders a chance at viewing and using what they might end having to code in the future. Therefore, we are inviting one programmer expected to know some PHP to test our page and give us feedback on its usability. This test will be done remotely over screen share on Oct the 11<sup>th</sup>.

## Executive Summary

The test will consist of using several forms and pages to check the usability. The tester will be asked to use the website forms with valid and invalid data, insuring there is no risk of errors. As well as checking to see if the services work as intended. We hope to have a well working product to ensure a good look to our next generation of programmers.

Upon review of this usability test plan, including the draft task scenarios and usability goals for **the Student Enrollment Service** documented acceptance of the plan is expected.

## Methodology

As stated before this test will be conducted with one or two other programmers with some prior knowledge of what PHP is and how it's used. We will be trying to accomplish a general meeting together during class hours. The user should



be able to run any browser of their choosing; however, we will try to focus either Chrome or Microsoft Edge.

### **Participants**

The participants of this test will be consisting of other students from the class. We hope to use the fact that they are still students to give us a better understanding of what other students may be interested in.

The participants' responsibilities will be to attempt to complete a set of representative task scenarios presented to them in as efficient and timely a manner as possible, and to provide feedback regarding the usability and acceptability of the user interface. The participants will be directed to provide honest opinions regarding the usability of the application, and to participate in post-session subjective questionnaires and debriefing.

Again, we are recruiting either one or two other programmers to test this service. They are being picked for their knowledge about PHP and programming. We expect our testers to have a grasp on the capabilities of PHP, ensuring they can give us a detailed report.

### **Training**

The tester/testy will be given a thorough explanation on what the service is and its many uses. The participants will receive an overview of the usability test procedure, equipment and software. [Describe any parts of the test environment or testing situation that may be nonfunctional.]

### **Procedure**

#### **Enrollment Service Testing**

Participants will take part in the usability test at IWCC in class room Fremont 118. A general computer with basic functions and with the Web site/Web application and supporting software will be used in a typical office environment. The participant's interaction with the Web site/Web application will be monitored by the facilitator seated in the same office. Note takers and data logger(s) will monitor the sessions in observation room, connected by video camera feed of their working computers screen. The test sessions will be videotaped.

The user will use a class work computer to access our service. They will share their thoughts in class.

The facilitator will brief the participants on the Web site/Web application and instruct the participant that they are evaluating the application, rather than the facilitator evaluating the participant. Participants will sign an informed consent that acknowledges: the participation is voluntary, that participation can cease at any time, and that the session will be videotaped but their privacy of identification will be safeguarded. The facilitator will ask the participant if they have any questions.

Participants will complete a pretest demographic and background information questionnaire. The facilitator will explain that the amount of time taken to complete the test task will be measured and that exploratory behavior outside the task flow should not occur until after task completion. At the start of each task, the participant will read aloud the task description from the printed copy



and begin the task. Time-on-task measurement begins when the participant starts the task.

The facilitator will instruct the participant to 'think aloud' so that a verbal record exists of their interaction with the Web site/Web application. The facilitator will observe and enter user behavior, user comments, and system actions in the data logging application.

After each task, the participant will complete the post-task questionnaire and elaborate on the task session with the facilitator. After all task scenarios are attempted, the participant will complete the post-test satisfaction questionnaire.

Participants will take part in the usability test via remote screen-sharing technology. The participant will be seated at their workstation in their work environment. Verbal communication will be supported via telephone.

The facilitator will brief the participant and instruct that he or she is evaluating the Web site/Web application, rather than the facilitator evaluating the participant. Participants will complete a pretest demographic and background information questionnaire. Sessions will begin when all participant questions are answered by the facilitator. The facilitator will inform the participant that time-on-task will be measured and that exploratory behavior outside the task flow should not occur until after task completion.

The facilitator will instruct the participant to read aloud the task description from the printed copy and begin the task. Time-on-task measure will begin. The facilitator will encourage the participants to 'think aloud' and that a verbal record will exist of the task-system interaction. The facilitator will observe and enter user behavior and comments, and system interaction in a data logging application.

After each task, the participant will complete the post-task questionnaire and elaborate on the task session. After all tasks have been attempted, the participant will complete a post-test satisfaction questionnaire.

## **Roles**

The roles involved in a usability test are as follows. An individual may play multiple roles and tests may not require all roles.

### **Trainer**

- Provide training overview prior to usability testing

### **Facilitator**

- Provides overview of study to participants
- Defines usability and purpose of usability testing to participants
- Assists in conduct of participant and observer debriefing sessions
- Responds to participant's requests for assistance



### Data Logger

- Records participant's actions and comments

### Test Observers

- Silent observer
- Assists the data logger in identifying problems, concerns, coding bugs, and procedural errors
- Serve as note takers.

### Test Participants

- Provides overview of study to participants
- Defines usability and purpose of usability testing to participants
- Assists in conduct of participant and observer debriefing sessions
- Responds to participant's requests for assistance

### Ethics

All persons involved with the usability test are required to adhere to the following ethical guidelines:

- The performance of any test participant must not be individually attributable. Individual participant's name should not be used in reference outside the testing session.
- A description of the participant's performance should not be reported to his or her manager.

## Usability Tasks

The usability tasks were derived from test scenarios developed from use cases and/or with the assistance of a subject-matter expert. Due to the range and extent of functionality provided in the application or Web site, and the short time for which each participant will be available, the tasks are the most common and relatively complex of available functions. The tasks are identical for all participants of a given user role in the study

The task descriptions below are required to be reviewed by the application owner, business-process owner, development owner, and/or deployment manager to ensure that the content, format, and presentation are representative of real use and substantially evaluate the total application. Their **acceptance is to be documented** prior to usability test.

They will be tasked with using our application to create a user account and then use it to enroll it classes. As well as add and editing data into our cutting-edge databases.

## Usability Metrics

Usability metrics refers to user performance measured against specific performance goals necessary to satisfy usability requirements. Scenario completion success rates, adherence to dialog scripts, error rates, and subjective evaluations will be used. Time-to-completion of scenarios will also be collected.

### **Scenario Completion**

Each scenario will require, or request, that the participant obtains or inputs specific data that would be used in course of a typical task. The scenario is completed when the participant indicates the scenario's goal has been obtained (whether successfully or unsuccessfully) or the participant requests and receives sufficient guidance as to warrant scoring the scenario as a critical error.

### **Critical Errors**

Critical errors are deviations at completion from the targets of the scenario. Obtaining or otherwise reporting of the wrong data value due to participant workflow is a critical error. Participants may or may not be aware that the task goal is incorrect or incomplete.

Independent completion of the scenario is a universal goal; help obtained from the other usability test roles is causing to score the scenario a critical error. Critical errors can also be assigned when the participant initiates (or attempts to initiate) an action that will result in the goal state becoming unobtainable. In general, critical errors are unresolved errors during the process of completing the task or errors that produce an incorrect outcome.

### **Non-critical Errors**

Non-critical errors are errors that are recovered from by the participant or, if not detected, do not result in processing problems or unexpected results. Although non-critical errors can be undetected by the participant, when they are detected they are generally frustrating to the participant.

These errors may be procedural, in which the participant does not complete a scenario in the most optimal means (e.g., excessive steps and keystrokes). These errors may also be errors of confusion (ex., initially selecting the wrong function, using a user-interface control incorrectly such as attempting to edit an un-editable field).

Noncritical errors can always be recovered from during the process of completing the scenario. Exploratory behavior, such as opening the wrong menu while searching for a function, **will not** be coded as a non-critical error.

### **Subjective Evaluations**

Subjective evaluations regarding ease of use and satisfaction will be collected via questionnaires, and during debriefing at the end of the session. The questionnaires will utilize free-form responses and rating scales.

### **Scenario Completion Time (time on task)**

The time to complete each scenario, not including subjective evaluation durations, will be recorded.

## **Usability Goals**

The next section describes the usability goals for **the Student Enrollment Service**.

### Completion Rate

Completion rate is the percentage of test participants who successfully complete the task without critical errors. A critical error is defined as an error that results in an incorrect or incomplete outcome. In other words, the completion rate represents the percentage of participants who, when they are finished with the specified task, have an "output" that is correct. Note: If a participant requires assistance in order to achieve a correct output then the task will be scored as a critical error and the overall completion rate for the task will be affected.

**A completion rate of 100% is the goal for each task in this usability test.**

### Error-free rate

Error-free rate is the percentage of test participants who complete the task without any errors (critical **or** non-critical errors). A non-critical error is an error that would not have an impact on the final output of the task but would result in the task being completed less efficiently.

**An error-free rate of 95% is the goal for each task in this usability test.**

### Time on Task (TOT)

The time to complete a scenario is referred to as "time on task". It is measured from the time the person begins the scenario to the time he/she signals completion.

### Subjective Measures

Subjective opinions about specific tasks, time to perform each task, features, and functionality will be surveyed. At the end of the test, participants will rate their satisfaction with the overall system. Combined with the interview/debriefing session, these data are used to assess attitudes of the participants.

## Problem Severity

To prioritize recommendations, a method of problem severity classification will be used in the analysis of the data collected during evaluation activities. The approach treats problem severity as a combination of two factors - the impact of the problem and the frequency of users experiencing the problem during the evaluation.

### Impact

Impact is the ranking of the consequences of the problem by defining the level of impact that the problem has on successful task completion. There are three levels of impact:

- High - prevents the user from completing the task (critical error)
- Moderate - causes user difficulty but the task can be completed (non-critical error)
- Low - minor problems that do not significantly affect the task completion (non-critical error)



## Frequency

Frequency is the percentage of participants who experience the problem when working on a task.

- High: 30% or more of the participants experience the problem
- Moderate: 11% - 29% of participants experience the problem
- Low: 10% or fewer of the participants experience the problem

## Problem Severity Classification

The identified severity for each problem implies a general reward for resolving it, and a general risk for not addressing it, in the current release.

**Severity 1** - High impact problems that often prevent a user from correctly completing a task. They occur in varying frequency and are characteristic of calls to the Help Desk. Reward for resolution is typically exhibited in fewer Help Desk calls and reduced redevelopment costs.

**Severity 2** - Moderate to high frequency problems with moderate to low impact are typical of erroneous actions that the participant recognizes needs to be undone. Reward for resolution is typically exhibited in reduced time on task and decreased training costs.

**Severity 3** - Either moderate problems with low frequency or low problems with moderate frequency; these are minor annoyance problems faced by a number of participants. Reward for resolution is typically exhibited in reduced time on task and increased data integrity.

**Severity 4** - Low impact problems faced by few participants; there is low risk to not resolving these problems. Reward for resolution is typically exhibited in increased user satisfaction.

## Reporting Results

The Usability Test Report will be provided at the end of the usability test. It will consist of a report and/or a presentation of the results; evaluate the usability metrics against the pre-approved goals, subjective evaluations, and specific usability problems and recommendations for resolution. The recommendations will be categorically sized by development to aid in implementation strategy. The report is anticipated to be delivered to the Project UCD Contact by [jakekreif@gmail.com](mailto:jakekreif@gmail.com)

