**CHAPTER 5**

# RESULTS AND DISCUSSION

The web-based interactive map of MSU-IIT was evaluated through a pilot testing of thirty (30) respondents. The project developers were present during the hands-on testing of the system.

**Figure 5.1** Test User Groups Percentage of the Pilot Test

The test users were composed of five (5) administrators from the Physical Plant Division, nine (9) college students, eight (8) visitors and eight (8) Grade 10 students from La Salle Academy. The project developers chose these user groups because they represent those who can directly use the system.

**Figure 5.2** Gender Percentage of the Pilot Test

Based on the preliminary questionnaires given to the test users, 16 were female and 14 were male. The test user’s age range was between 16 to 36 years old. 27 out of 30 said that they have used maps or directions as guidance in visiting places. 14 out of 16 visitors and prospective students said that they have visited MSU-IIT before. 17 out of 25 students, visitors and prospective students said that they got lost inside the campus while looking for their destination. Lastly, 22 out of 25 students, visitors and prospective students said that they would prefer a virtual 3D campus map than a traditional campus map. (See Table 5.1 for summary).

**Table 5.1** Preliminary Results

|  |  |  |
| --- | --- | --- |
| Question | Yes | No |
| Q1: Have you used maps or directions as guidance in visiting places? | 27 | 3 |
| Q2: Have you visited MSU-IIT before? (if visitor or prospective student) | 14 | 2 |
| Q3: When inside the campus, have you tried looking for a location but got lost instead? | 17 | 8 |
| Q4: Would you prefer a virtual 3D campus map than a traditional campus map? | 22 | 3 |

## **Feedback Results of the Interactive Map**

This section presents the results that were gathered during the hands-on testing of the interactive map. The pilot testing for the interactive map was done on the 3rd of May, 2016 from 11AM to 5PM.

After the testing, System Usability Scale questionnaires were given to the testers and were later gathered and analyzed by the researchers.

**Feedback on System Usability of the Interactive Map**

**Table 5.2** Administrators’ Feedback on System Usability of the Interactive Map

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Q1: I think that I would like to use this system frequently |  |  |  | 2 | 3 |
| Q2: I found the system unnecessarily complex | 5 |  |  |  |  |
| Q3: I thought the system was easy to use |  |  |  | 1 | 4 |
| Q4: I think that I would need the support of a technical person to be able to use this system | 1 | 2 | 2 |  |  |
| Q5: I found the various functions in this system were well integrated |  |  |  | 4 | 1 |
| Q6: I thought there was too much inconsistency in this system | 1 | 4 |  |  |  |
| Q7: I would imagine that most people would learn to use this system very quickly |  |  |  | 2 | 3 |
| Q8: I found the system very awkward to use | 5 |  |  |  |  |
| Q9: I felt very confident using the system |  |  |  | 3 | 2 |
| Q10: I needed to learn a lot of things before I could get going with this system | 3 | 2 |  |  |  |

Table 5.2 shows the summary of the administrators’ feedback on the System Usability test of the Interactive Map.

**Figure 5.3** Interactive Map System Usability Feedback of Administrators

Figure 5.3 shows the percentage of the students’ individual rating in the aspect of usability for each statement of the SUS.

**Table 5.3** Students’ Feedback on System Usability of the Interactive Map

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Q1: I think that I would like to use this system frequently |  |  | 1 | 4 | 4 |
| Q2: I found the system unnecessarily complex | 2 | 2 | 5 |  |  |
| Q3: I thought the system was easy to use |  |  | 2 | 3 | 4 |
| Q4: I think that I would need the support of a technical person to be able to use this system | 5 | 2 | 2 |  |  |
| Q5: I found the various functions in this system were well integrated |  |  |  | 6 | 3 |
| Q6: I thought there was too much inconsistency in this system | 2 | 4 | 2 | 1 |  |
| Q7: I would imagine that most people would learn to use this system very quickly |  |  | 1 | 3 | 5 |
| Q8: I found the system very cumbersome to use | 4 | 4 | 1 |  |  |
| Q9: I felt very confident using the system |  |  | 2 | 2 | 5 |
| Q10: I needed to learn a lot of things before I could get going with this system | 6 | 2 | 1 |  |  |

Table 5.3 shows the summary of the students’ feedback on the System Usability test of the Interactive Map.

**Figure 5.4** Interactive Map System Usability Feedback of Students

Figure 5.4 shows the percentage of the students’ individual rating in the aspect of usability for each statement of the SUS.

**Table 5.4** Visitors’ Feedback on System Usability of the Interactive Map

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Q1: I think that I would like to use this system frequently |  | 1 |  | 5 | 2 |
| Q2: I found the system unnecessarily complex | 3 | 3 | 2 |  |  |
| Q3: I thought the system was easy to use |  |  |  | 3 | 5 |
| Q4: I think that I would need the support of a technical person to be able to use this system | 4 | 3 | 1 |  |  |
| Q5: I found the various functions in this system were well integrated |  |  | 2 | 2 | 4 |
| Q6: I thought there was too much inconsistency in this system | 4 | 2 | 2 |  |  |
| Q7: I would imagine that most people would learn to use this system very quickly |  |  |  | 1 | 7 |
| Q8: I found the system very awkward to use | 3 | 3 | 1 | 1 |  |
| Q9: I felt very confident using the system |  |  | 1 | 3 | 4 |
| Q10: I needed to learn a lot of things before I could get going with this system | 6 | 2 |  |  |  |

Table 5.3 shows the summary of the visitors’ feedback on the System Usability test of the Interactive Map.

**Figure 5.5** Interactive Map System Usability Feedback of Visitors

Figure 5.5 shows the percentage of the visitors’ individual rating in the aspect of usability for each statement of the SUS.

**Table 5.5** Prospective Students’ Feedback on System Usability

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Q1: I think that I would like to use this system frequently |  |  |  | 3 | 5 |
| Q2: I found the system unnecessarily complex | 5 | 3 |  |  |  |
| Q3: I thought the system was easy to use |  |  |  | 1 | 7 |
| Q4: I think that I would need the support of a technical person to be able to use this system | 6 |  | 2 |  |  |
| Q5: I found the various functions in this system were well integrated |  |  | 1 | 4 | 3 |
| Q6: I thought there was too much inconsistency in this system | 3 | 5 |  |  |  |
| Q7: I would imagine that most people would learn to use this system very quickly |  |  | 1 | 3 | 4 |
| Q8: I found the system very cumbersome to use | 6 | 2 |  |  |  |
| Q9: I felt very confident using the system |  |  |  | 4 | 4 |
| Q10: I needed to learn a lot of things before I could get going with this system | 5 | 2 | 1 |  |  |

Table 5.3 shows the summary of the prospective students’ feedback on the System Usability test of the Interactive Map.

**Figure 5.6** Interactive Map System Usability Feedback of Prospective Students

Figure 5.6 shows the percentage of the prospective students’ individual rating in the aspect of usability for each statement of the SUS.

**Table 5.6** Total Feedback on System Usability of the Interactive Map

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| Q1: I think that I would like to use this system frequently |  | 1 | 1 | 14 | 14 |
| Q2: I found the system unnecessarily complex | 15 | 8 | 7 |  |  |
| Q3: I thought the system was easy to use |  |  | 2 | 8 | 20 |
| Q4: I think that I would need the support of a technical person to be able to use this system | 16 | 7 | 7 |  |  |
| Q5: I found the various functions in this system were well integrated |  |  | 3 | 16 | 11 |
| Q6: I thought there was too much inconsistency in this system | 10 | 15 | 4 | 1 |  |
| Q7: I would imagine that most people would learn to use this system very quickly |  |  | 2 | 9 | 19 |
| Q8: I found the system very awkward to use | 18 | 9 | 2 | 1 |  |
| Q9: I felt very confident using the system |  |  | 3 | 12 | 15 |
| Q10: I needed to learn a lot of things before I could get going with this system | 19 | 8 | 2 |  | 1 |

Table 5.6 shows the summary of the total feedback of all participants on the System Usability test of the Interactive Map.

**Figure 5.7** Interactive Map System Usability Feedback of Prospective Students

Figure 5.7 shows the percentage of the prospective students’ individual rating in the aspect of usability for each statement of the SUS.

## **Scoring System Usability Scale**

SUS has a way of calculating the scores of each tester. To calculate the SUS score, first sum the score contributions from each item. Each item's score contribution will range from 0 to 4. For items 1,3,5,7, and 9 the score contribution is the scale position minus 1. For items 2,4,6,8 and 10, the contribution is 5 minus the scale position. Multiply the sum of the scores by 2.5 to obtain the overall value of SU. SUS scores have a range of 0 to 100. The standard passing score for SUS is 68, a SUS score above 68 would be considered above average and any score below 68 is deliberated as below average.

## **SUS Scores of Each Participant of Each User Group**

**Table 5.7** Administrators’ System Usability Results

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Participant | 1 | 2 | 3 | 4 | 5 | Total | **Overall** |
| SUS Score | 87.5 | 80 | 90 | 92.5 | 80 | 430 | **86** |

Table 5.7 shows that all of the SUS scores of the administrators passed the 68 score-mark.

**Table 5.8** Students’ System Usability Results

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Participant | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | Total | **Overall** |
| SUS Score | 82.5 | 90 | 67.5 | 87.5 | 75 | 67.5 | 80 | 87.5 | 90 | 727.5 | **81** |

Table 5.8 shows that 7 of the SUS scores of the students passed the 68 score-mark while 2 were below average.

**Table 5.9** Visitors’ System Usability Results

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Participant | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | Total | **Overall** |
| SUS Score | 70 | 80 | 90 | 77.5 | 90 | 90 | 100 | 77.5 | 675 | **84** |

Table 5.9 shows that all of the SUS scores of the visitors passed the 68 score-mark.

**Table 5.10** Prospective Students’ System Usability Results

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Participant | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | Total | **Overall** |
| SUS Score | 80 | 97.5 | 95 | 95 | 85 | 87.5 | 87.5 | 80 | 707.5 | **88** |

Table 5.10 shows that all of the SUS scores of the prospective students passed the 68 score-mark.

## **System Usability Scale Analysis**

### **System Usability Analysis for Administrators**

From the results shown in Table 5.7, the project developers obtained an average score of 86 for the administration group with all of them having scores above 80. This concludes that the administration group which mainly consists of the Physical Plant Division committee of the campus gives this product a passing grade.

### **System Usability Analysis for Students**

From the results shown in Table 5.8, the project developers obtained an average score of 81 for the students group with 2 of the respondents giving 67.5 score which is lower than the passing grade of 68. This may suggest that the student group would likely use the product only in their freshmen year. However, the average score reached the passing grade thus concludes the product can still be beneficial to resident students.

### **System Usability Analysis for Visitors**

From the results shown in Table 5.9, the project developers obtained an average score of 84 for the visitor group with only 3 of the participants have scores lower than 80. The average score passed the average grade thus concludes the system is usable for them.

### **System Usability Analysis for Prospective Students**

From the results shown in Table 5.10, the project developers obtained an average score of 88 for the prospective students with all of the scores above 80. This suggest that the system is useful to them since they will need this type of technology if they sought to enroll in MSU-IIT.