

NASA Career Information System

Usability Evaluation

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Team F

Bryan Cunningham

Matthew Gorbisky

Jennifer Steiminger

Matthew Stone

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I. Introduction

1. Background

The general purpose for the redesign of the current NASA site is to make tasks much simpler for the four main types of users of this site. As the team revised and updated the design for the career system, it became apparent that analytical data such as claims analysis and heuristic evaluations were not going to be enough to validate the design. Therefore, the team decided that an empirical analysis would be best to bring out any design and usability issues users have.

The team conducted a usability study with six participants of varying background that would help to validate the system. A prototype was created to use in the study and the participants were given a set of scenarios that they completed using the prototype.

The prototype used was a scenario machine that acted as a partial implementation. The prototype had limited functionality, but was able to be used to complete the scenarios given. In some cases, the scenario machine used pre-defined scripts to illustrate how the system would work to users. In most cases, participants were not aware that their actions were not affecting the system and that the screens they saw were pre-determined.

Participants in the study were each given the same set of scenarios. This created a within-subjects test, as each participant was exposed to the same set of variables. The order was not changed between participants to avoid data that makes the assumption that the order the scenarios were given had an impact on the participants ability to perform the tasks.

2. Users

One of the common users is the employee updating the job listings. This user needs to be able to quickly, efficiently, and securely log in, add/modify/delete listings, and sort listings. It is also important to be able to set active dates or dates when the job listing goes live to the web. Another typical user is a student looking for information on courses that may help to get them a position within NASA. The student can browse different plans that may gear them towards a particular position. Students can then take NASA's list of subjects and bring them to a counselor for an adaptation to the program at the student's school. The third typical user is a person in search of a job. This user can search through listings using certain criteria such as location, salary, and degree requirements. It is also possible to sort the results that do meet requirements either in order of deadlines or by any of the previously mentioned criteria. The fourth scenario for a user is to create a profile with in the NASA website. Creating a profile will allow a user to store their resume and other information through NASA. This will allow them to easily upload or email their resume for certain job openings.

3. Design Scenarios

The original design scenarios developed and used for the study are as follows.

3.1 Design Scenario 1

Being a freshman in college, Bob was curious about what types of courses he should be taking in order to prepare him for his job search he will be facing after graduation. He decided to study aerospace engineering. His dream of being an astronaut didn't fade after elementary school. He knew he wanted to in some way explore space and the unknown.

The most obvious place to start in his research of good courses he thought would be NASA. Since he did not know the different courses that were available to him through his university, he decided he would look through the website with his adviser, Professor Smith. Together, they started exploring the NASA sight. Conveniently on the career opening page for NASA, there was a section for educational support. They decided these links were a good start. The career paths link provided them with a selection of various jobs at NASA. They clicked the link that most closely matched Bob's major.

This took them to the next page that contained a list of information and recommended subjects that they would most likely need in applying for a job like this. Each subject was a link to a description of that subject and what it entails. Prof. Smith was able to tell Bob which courses that the university offers best covers the information or closely matches the suggested courses. Bob then wrote down a list of these courses and was now ready to fully prepare himself in college in hopes of working for NASA after graduation.

3.2 Design Scenario 2

After logging in and navigating to the job posting section of the NASA website, Jack finds an interface that will let him search for a job. Jack has specific needs for a potential job, including salary minimum, location from his current residence, and degrees required. Some of these criteria are immutable (degree requirements), and some can vary (salary, distance). He begins by entering all criteria into the search field, being as specific as possible. When he submits the job search form, a tabbed window is displayed. The first tab is a spreadsheet-type informational layout of jobs that match his search. The second tab is a connected-node browser of jobs that match his criteria and closely related jobs.

The first tab is selected by default, and shows four listings, none that Jack likes. A descriptive text explains that by switching to the second tab he can find similar jobs that might match his requirements.

After selecting the second tab, an interactive node-based job browser is displayed in place of the job listing from before. The four returned jobs are spread around the screen and are the largest, with tens of related jobs connected to each of the original search results. By clicking related jobs, the search criteria is updated, and new node maps are displayed, showing relevance and search classifications by color and line weight.

When Jack selects a job, he is returned to the detailed display tab with that job selected. Finding a job for slightly less money than he had first requested, Jack submits his resume and a cover letter and is emailed a confirmation of his job application.

3.3 Design Scenario 3

Jane is a recent college graduate looking to work for NASA. When she reaches the NASA career system, she searches for jobs that interest her. When she realizes that there are a few different options for her, she decides to create a profile where she can maintain her personal information, resumes, and job interests. The profile, she learns, will allow her to store interests, allowing her to be notified of new job openings of interest to Jane as they are entered. She also learns that she can maintain multiple resumes to help target a specific job.

Once Jane has created the profile, she logs into the system by entering her userid and password and clicking the submit button. She is then taken to her profile page. From here, she sees the jobs she has applied for, new jobs that may be of interest to her, her personal information, and her resumes. Jane decides to update her resume, so she clicks the 'Add new resume' link. Here, she can upload a resume or create a new one from scratch. She also assigns a name to the resume to help her identify it in the future.

After saving her new resume, she returns to her profile page. Here, she checks the button that allows her to be notified of new job postings. Jane is now set to apply for different jobs at NASA and has an edge over other applicants who do not utilize the profile.

3.4 Design Scenario 4

Bob, a NASA employee in charge of updating and maintaining job listings, is looking to update the NASA site. He decides that this site should definitely be database driven which will hopefully end some headaches for him. Bob believes this because he will then be able to sort all positions and using different fields will be able to filter outdated job postings. He wants to have a system that is web-driven and would like to use buttons placed underneath each position to indicate an addition / deletion / modification. The modification and addition options would bring him to a form containing seven fields. Those fields are: Name, Description, Contact Person, Location, Date Entered, Date Effective, and Date Ending. The Date Active field allows Bob to work ahead and enter job postings into the database prior to the date they may be viewed on the website. For security, the site will be guarded by a password authentication system that few other employees will be able to access. Bob would really enjoy having the ability not only to filter outdated positions but also choose for example by department in a particular table as a way to narrow the large positioning pool.

The prototype is available at <http://www.gorbsky.com/nasa>

II. Usability Test Materials

1. Background survey

1. What is your age?
2. What is your gender?
3. What is your nationality?
4. What is your native language?
5. What is your area of study?
6. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with internet websites?
7. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with interactive internet websites?
8. Do you own a computer?
 - a. If you own a computer, do you have internet access as well?
 - b. If you have internet access, is it dial-up (modem) or high-speed (cable modem/DSL)
9. How long have you been using the internet for?
10. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the current NASA website.
11. Have you ever applied for a position at NASA before?
12. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the NASA organization?

2. Scenario Scripts

Scenario One:

Pretend you are a freshman in college and you want to discover what types of courses you should be taking in order to prepare for your job.

1. Navigate to the new NASA website
2. Click on the link that corresponds to a list of courses to take for your area of study.
3. Choose the correct link for your major, Aerospace Engineering.
4. Find two courses to take this semester based on the resulting page choices

Scenario Two:

Pretend you are a professional recently unemployed. You wish to look at what positions are available at NASA. The first step you must take is to locate the job you desire. Your area of expertise is engineering, and you are currently living in Harrisburg; however, you have always wanted to relocate to Chicago.

1. Navigate to the new NASA website
2. Click the link that corresponds to searching for a career at NASA
3. Fill out the form with the attributes of the job you are looking for
 - a. Minimum salary: \$45,000
 - b. Location: Harrisburg
 - c. Keywords: Engineer
4. Peruse the results, and then display them visually
5. Zoom into the positions available in Chicago
6. Select the job in Chicago that is related to your field of study, Engineering, and view its details

Scenario Three:

Pretend you are a recent college graduate looking to work for NASA. You have been on the NASA site before, but you wish to update the information stored about you.

1. Navigate to the new NASA website
2. Click the link that corresponds to updating your personal information with NASA
3. Fill out the resulting form with your username and password
 - a. Your username is JaneDoe

- b. Your password is psu
4. Choose the option to upload a new resume into the system
5. Browse to your resume file
 - a. Your resume is located at C:\temp\resume.doc
6. Give your new resume a name
 - a. This is your 'Chemical' resume
7. Upload your resume
8. View the resume you just uploaded

Scenario Four:

Pretend you are a hiring manager for NASA, and you wish to extend the end date for the Program Manager job.

1. Navigate to the new NASA website
2. Click the link to update the job postings
3. Log in to the secure section of the NASA website
 - a. Your username is AdminDude
 - b. Your password is s3kr3t
4. Modify the job listing for the Program Manager in Chicago
5. Change the end date to 4/31/04 and save your changes

3. Reaction Survey

Rate each question on a scale from 1 to 5 with 1 being strongly disagree and 5 being strongly agree.

1. I was able to easily find the link for recommended courses
2. The visual job display allowed me to quickly determine characteristics of all jobs displayed.
3. I found the visual job display to be helpful
4. I found the visual job display confusing
5. I liked having multiple resume versions I could pick from
6. I was able to differentiate between the multiple resumes in my profile
7. I was able to easily navigate the new NASA website
8. I had little trouble finding information on the new NASA website.

4. Informed Consent

Project Name: NASA Website Re-Design

Team Member Names:

Matt Stone
Matt Gorbsky
Jen Steiminger
Bryan Cunningham

You are invited to participate in a study evaluating <http://www.gorbsky.com/nasa>. We are conducting this study as part of a class project in human-computer interaction; we will use the information we gather from you and the other study participants to come up with ideas for improving this website.

Please read the rest of this introduction and sign below, to certify that you are participating on a voluntary basis. You may ask to withdraw at any point, for any reason, even if we are in the middle of a procedure. Your privacy is important to us and we will not share your individual results with anyone beside other team members or the instructors for the course. Our discussion of the results will either group responses from individuals into a summary or use pseudonyms to maintain your confidentiality.

There is no direct benefit to you for participating in this study. It will help us to complete our class project and may lead to interesting ideas about website designs. If you are interested, we will be happy to share our project report with you—just let us know before you leave.

There are no known risks to you in participating in this study. We will ask to carry out four typical tasks with <http://www.gorbsky.com/nasa> and we will make notes about the steps that you take and any problems that you encounter. We will also gather some background information about you before you start, and interview you afterwards to gather your detailed and general reactions. Remember that we are interested in *how the system performs for you*, not in your personal ability to understand or predict how to carry out a task. The study will take about 20 minutes.

During the study, we will give you a brief instruction for each task, then you will attempt to carry the task out on your own. Please do not ask for help from us—think of the system as your only resource, although we will intervene if serious problems occur.

One difference in this study from how you normally would use a website is that we want you to *think out loud* about your mental experiences during the task. What we mean by this is to share with us your goals, your plans for achieving these goals, your reactions to how the system responds, and whether it seems you are making progress (or not). On occasion we may prompt you to tell us what you are thinking if you are quiet for a while. If you agree that it's OK, we may also record your comments as back-up for our written notes.

I am at least 18 years old, understand the procedures, and am participating on a voluntary basis:

Name

Date

III. Procedure

1. Two members of the team established a controlled testing area in a computer lab seldom used in the IST Building in the evening of Monday April 26, 2004. The team was planning on using a laptop in the hallway of the IST building, but it was determined that the hallway was not quiet enough to allow for total concentration from the participant. Therefore, the team settled for the computer lab.
2. Test participants were asked to come approximately 30 minutes apart to allow the team members to conduct thorough investigations. As some participants arrived before the previous one was finished, they were asked to wait outside or out of hearing range in the computer lab.
3. As each participant arrived, they were given a brief overview of what would be done during the test. It was explained to them that they would be completing a background survey, asked to perform certain tasks as a potential user, and complete a reaction survey. They were also informed that they did not have to answer questions they did not want to and could end the session at any time, for any reason. Participants were then asked to read and sign the informed consent document.
4. The background survey was completed by each participant before using the career system.
5. Participants were given the scenario scripts that outlined the goals of each 'user' that they would be playing. The participants then used the system according to each script.
6. Team members recorded information on time and errors made during the process. Also, as participants spoke aloud about what they were doing, notes were taken.
7. A reaction survey was conducted after the scenarios were completed.
8. A general discussion took place and reactions, opinions, thoughts, and questions were addressed at this point.
9. The data was collected, combined, and analyzed to identify trends.
10. Comments were collected and turned into design revisions.

IV. Results

1. Background Surveys

Participant	Age	Gender	Internet Familiarity	Interactive Internet Familiarity	Years of Internet Experience	NASA Website Familiarity	NASA Familiarity
1	22	F	3	3	4	1	3
2	22	M	4	4	6	2	4
3	22	M	3	2	5	1	2
4	20	M	5	4	8	1	2
5	21	F	5	4	10	1	3
6	21	F	5	3	5	1	3

This table is a compilation of data collected through background surveys of participants prior to the interviews. The numerical fields are Likert scales with answers ranging from 1 to 5.

2. Internet Experience

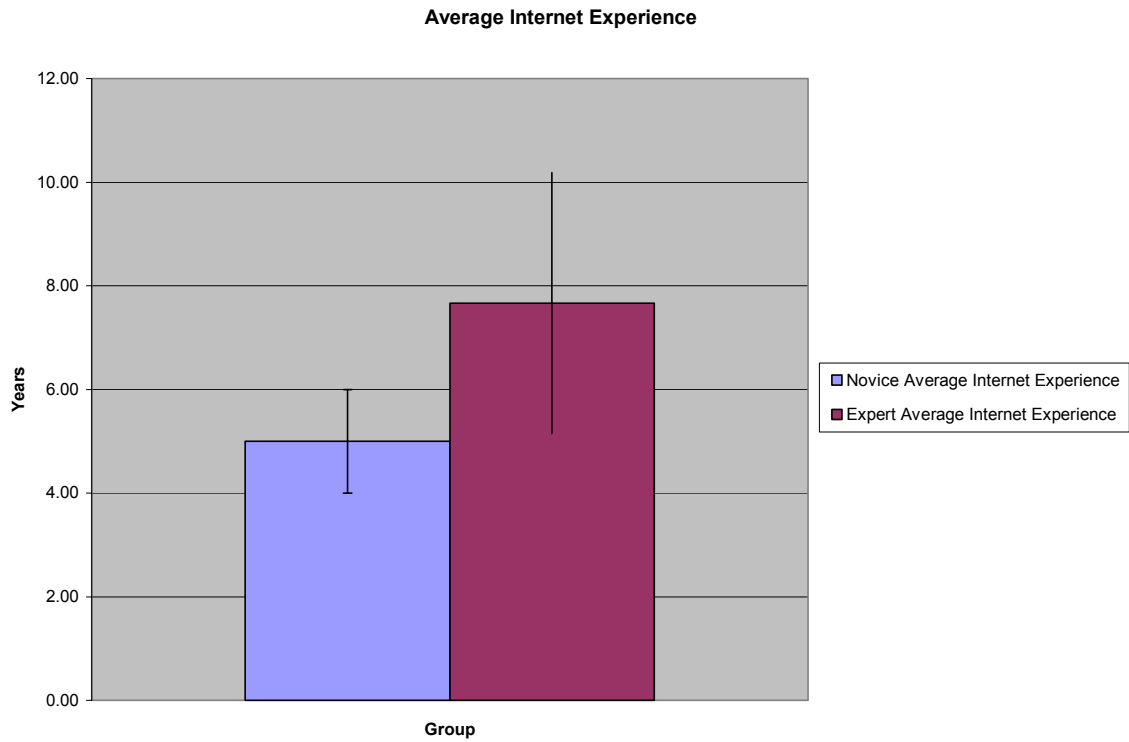


Figure 1

This graph demonstrates the difference between the average years of internet experience between both technical and non-technical users.

3. Age

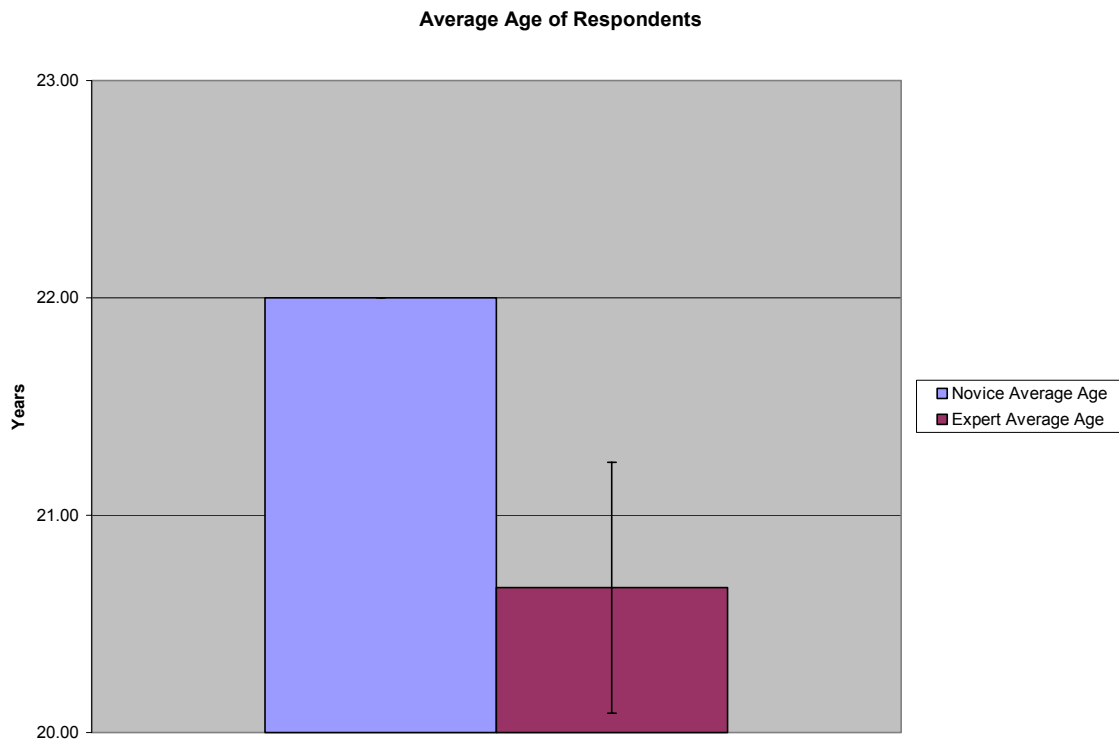


Figure 2

This figure displays the difference in average age of both technical and non-technical participants.

4. Internet Familiarity

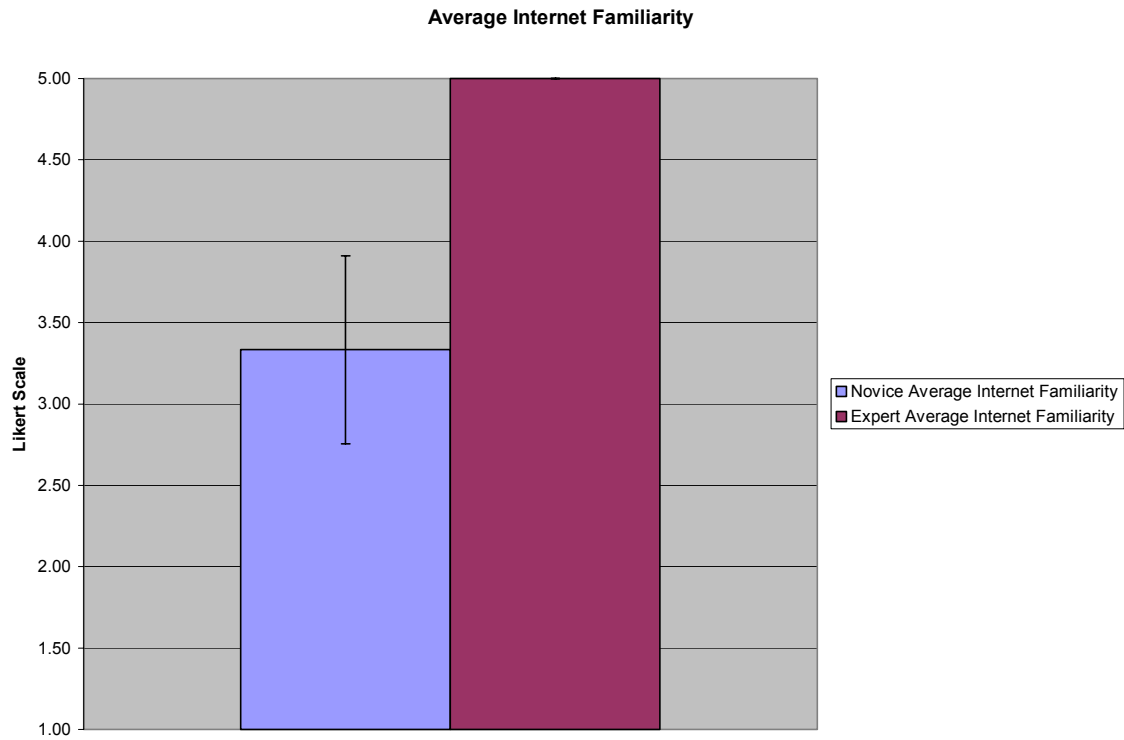


Figure 3

This figure shows how the average internet familiarity of non-technical versus technical participants varied.

5. Interactive Site Familiarity

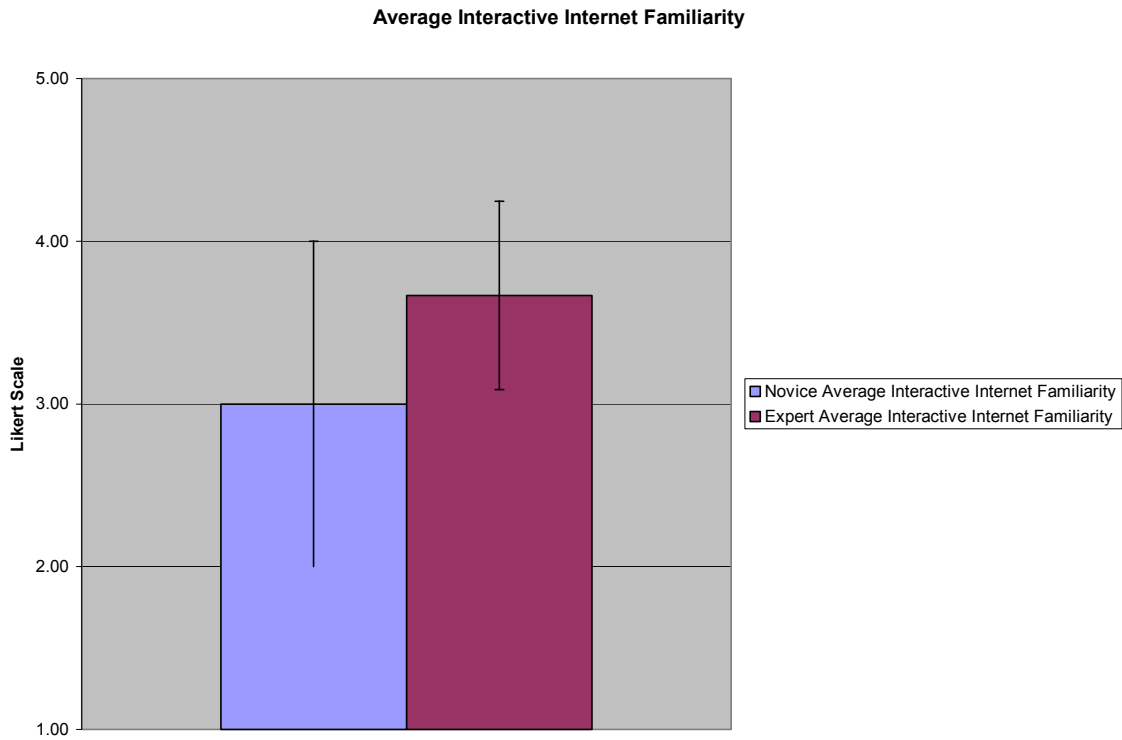


Figure 4

The graph displays the difference in average interactive internet website familiarity between non-technical and technical users.

6. NASA Website Familiarity

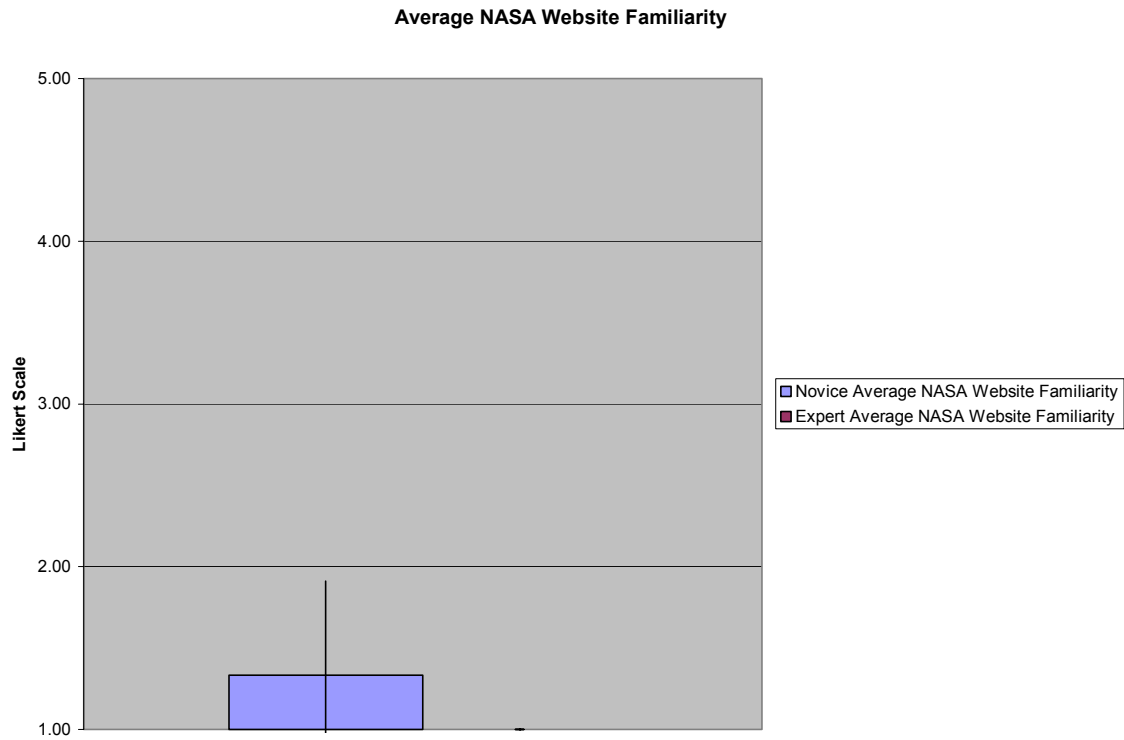


Figure 5

This graph shows the differing values for the average NASA website familiarity. The expert group had no familiarity with the website at all.

7. NASA Familiarity

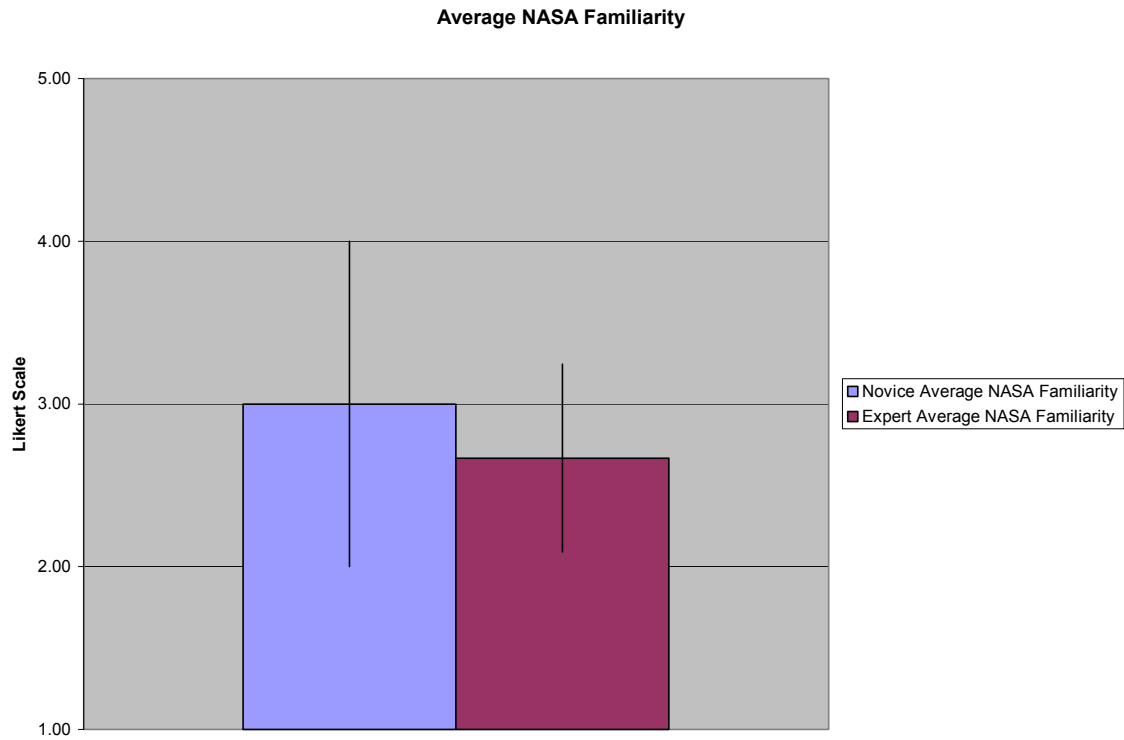


Figure 6

This graph displays the differences between not-technical and technical users in terms of average familiarity with the NASA organization. The non-technical users showed a slightly higher knowledge but that may be related to the fact one of the users was a history major with an interest in space exploration.

8. Novice Background

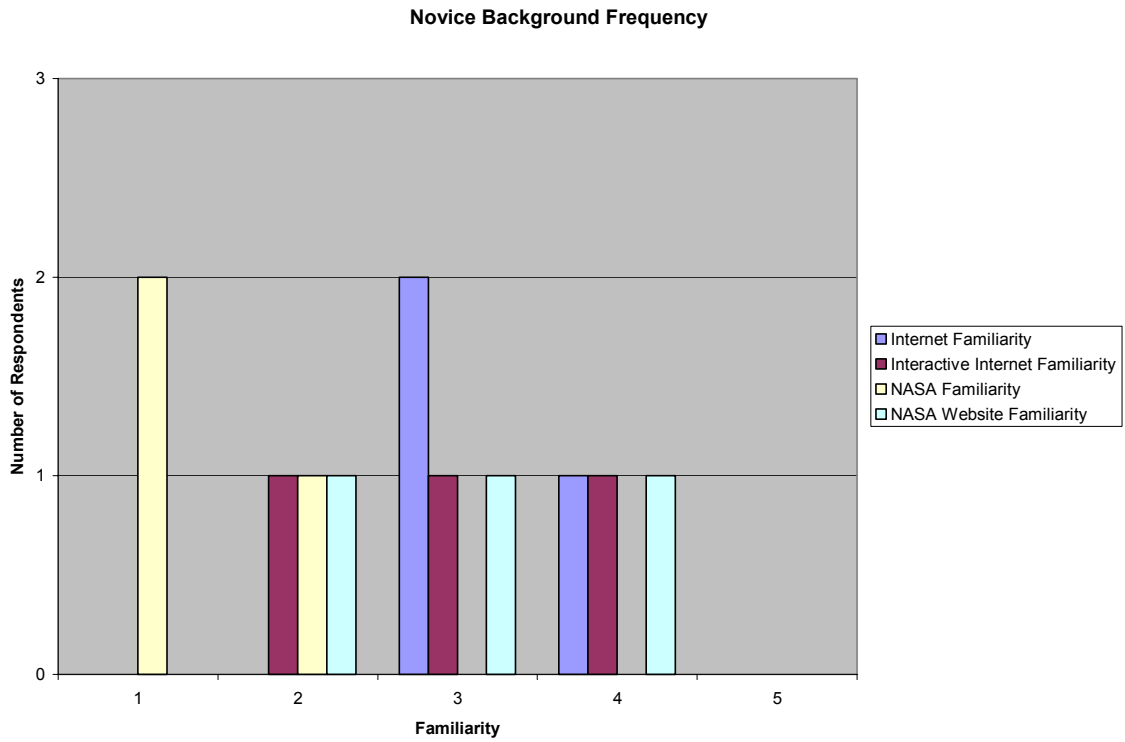


Figure 7

This figure displays the frequency of novice responses in background surveys regarding familiarity with the internet, interactive websites, NASA, and the NASA website.

9. Expert Background

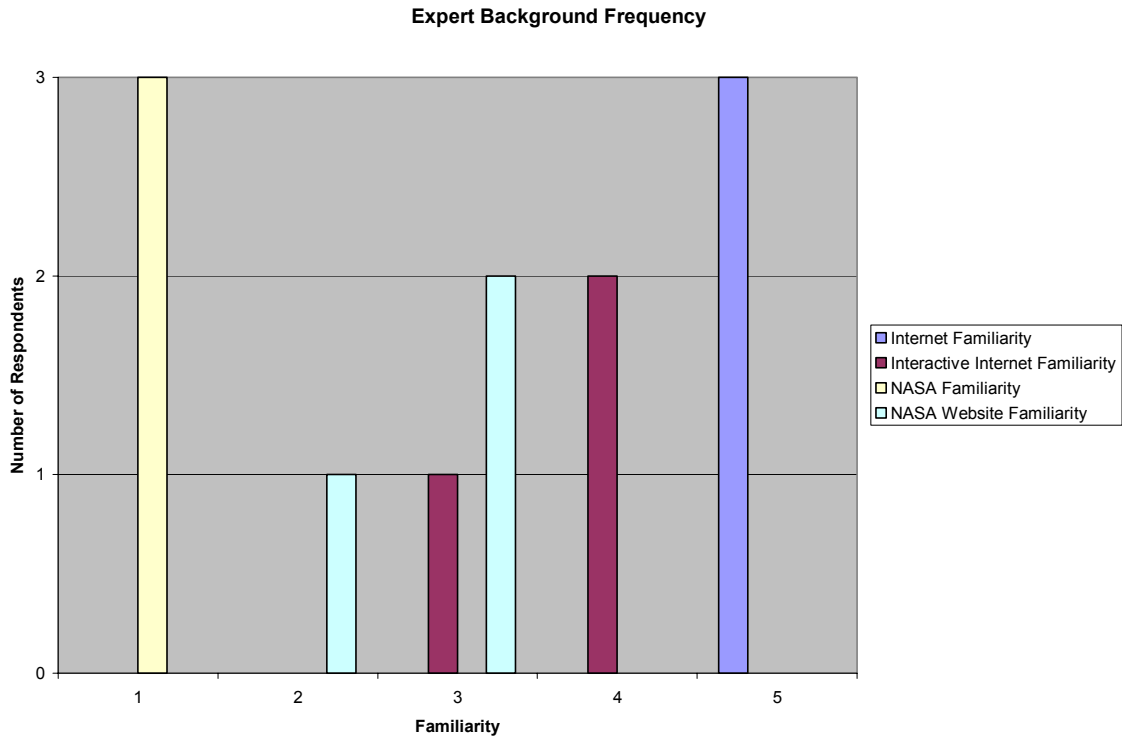


Figure 8

This figure displays the frequency of expert responses in background surveys regarding their familiarity with the internet, interactive websites, NASA, and the NASA website.

10. Time Data

	Non-Technical Users			Technical Users		
	<i>User 1</i>	<i>User 2</i>	<i>User 3</i>	<i>User 4</i>	<i>User 5</i>	<i>User 6</i>
Scenario 1	Time: 35 Seconds Errors: 0	Time: 24 Seconds Errors: 0	Time: 28 Seconds Errors: 0	Time: 20 Seconds Errors: 2	Time: 21 Seconds Errors: 1	Time: 26 Seconds Errors: 0
Scenario 2	Time: 72 Seconds Errors: 1	Time: 74 Seconds Errors: 1	Time: 62 Seconds Errors: 2	Time: 58 Seconds Errors: 1	Time: 50 Seconds Errors: 1	Time: 53 Seconds Errors: 1
Scenario 3	Time: 84 Seconds Errors: 1	Time: 90 Seconds Errors: 3	Time: 81 Seconds Errors: 1	Time: 77 Seconds Errors: 0	Time: 68 Seconds Errors: 0	Time: 71 Seconds Errors: 0
Scenario 4	Time: 68 Seconds Errors: 0	Time: 62 Seconds Errors: 0	Time: 71 Seconds Errors: 1	Time: 62 Seconds Errors: 0	Time: 59 Seconds Errors: 0	Time: 65 Seconds Errors: 0

Scenario	Average Time	Deviation	Total Errors	Average Errors	Error Deviation
1	26.75	6.40	2.00	0.50	1.00
2	66.50	7.72	5.00	1.25	0.50
3	83.00	5.48	5.00	1.25	1.26
4	65.75	4.50	1.00	0.25	0.50

	Average Errors	Deviation	Average Time	Deviation
Novice	3.33	1.15	250.33	8.50
Experienced	2.00	1.00	210.00	10.44

These tables contain information regarding the time to completion of task and also the number of errors per task. The second table puts both novice and expert users together to find overall figures for the experiment. The third table breaks the results down and found that novice users caused 1.33 more errors on average and also took 40.33 seconds longer on average to complete the four tasks.

11. Average Task Times

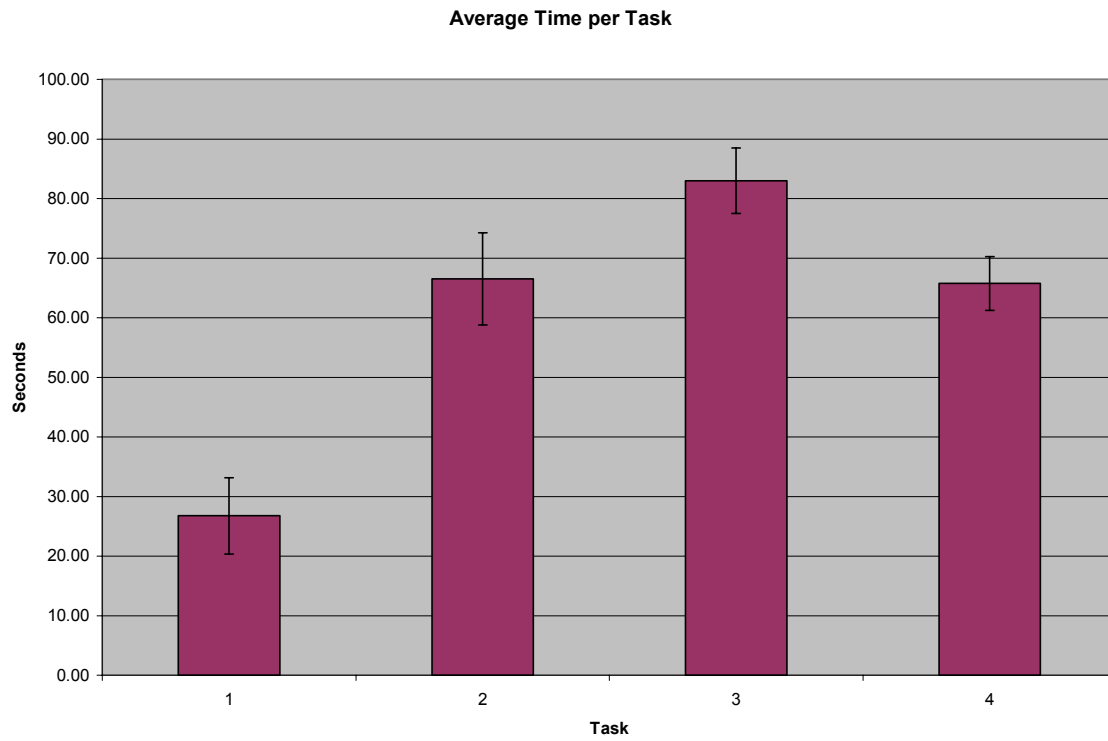


Figure 9

This graph displays the average time taken per scenario and does not separate experts from novices.

12. Task Errors

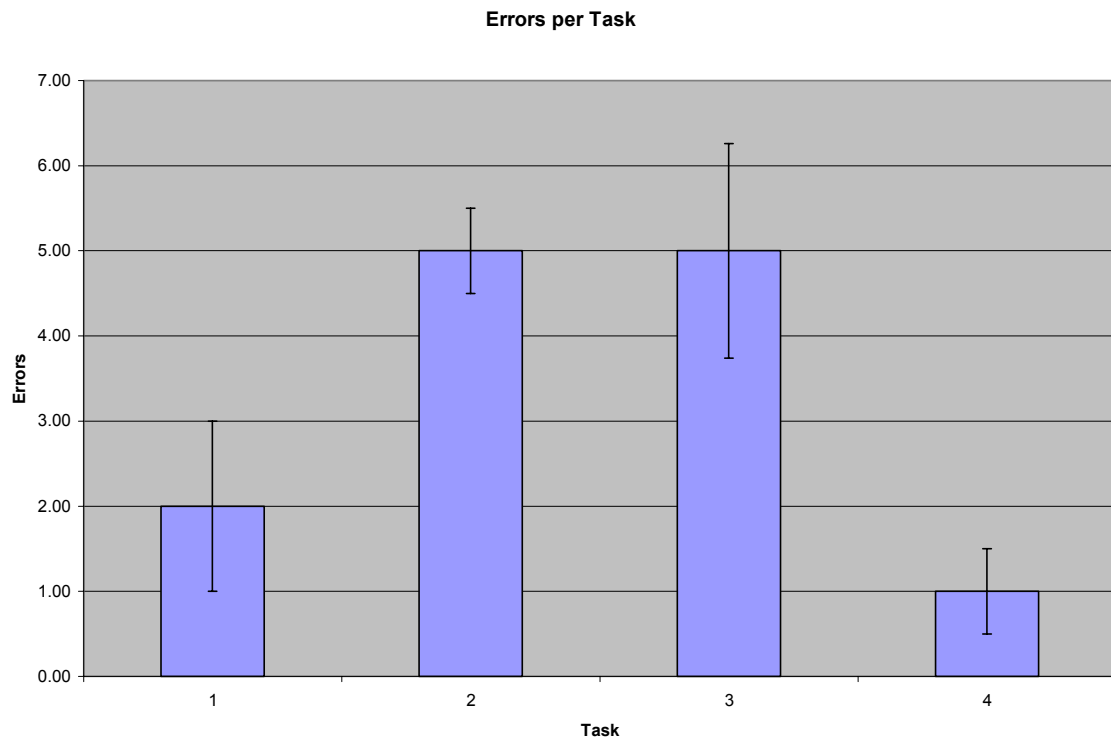


Figure 10

This graph displays the average errors per scenario and also does not discriminate between novice and expert users.

13. Errors per Group

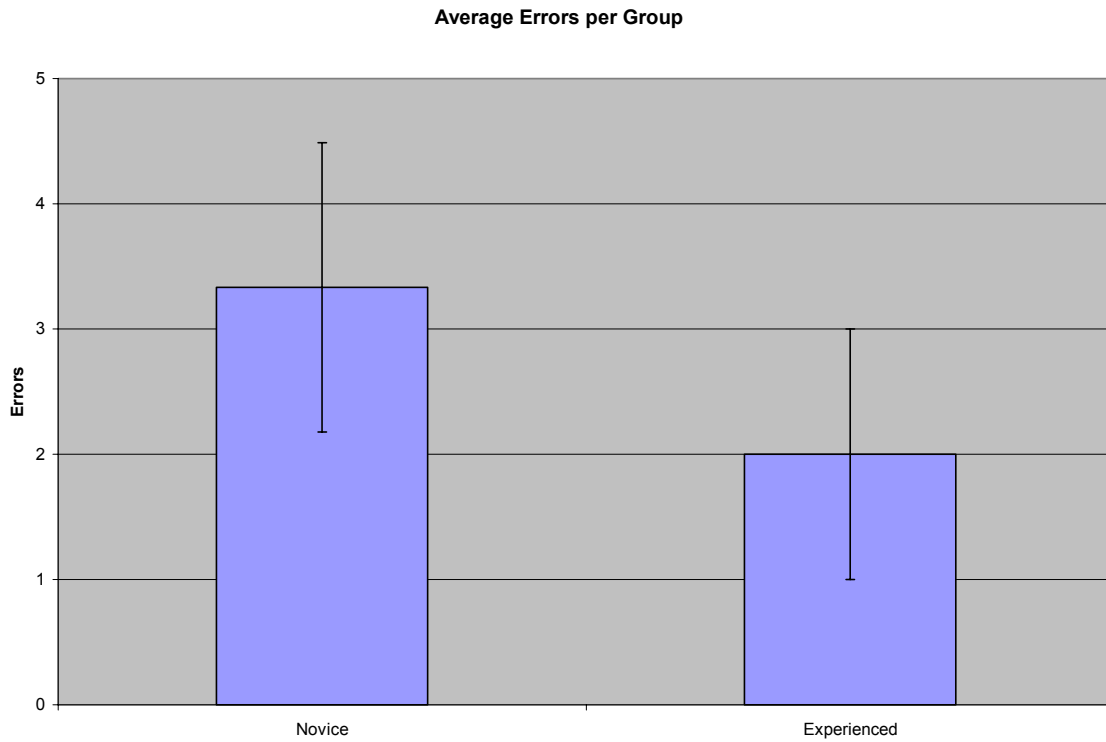


Figure 11

This table displays results indicating that the novice users experienced more errors on average than the experienced users.

14. Time per Group

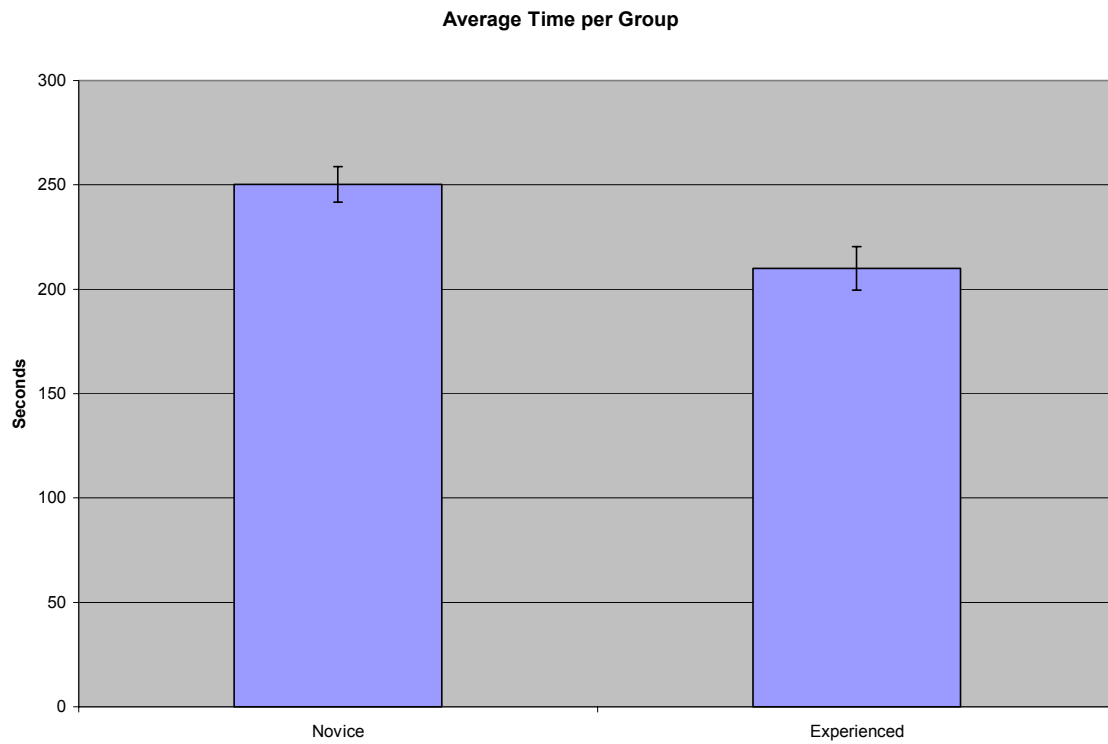


Figure 12

This graph reiterates the data stating that the novice users took more time on average to complete their tasks than the experienced users needed to complete their tasks.

15. Reaction Data

Average Likert Rating

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Novice	4.33	3.67	4.00	2.00	3.00	4.33	3.67	3.67
Expert	4.67	4.00	4.33	2.00	5.00	5.00	4.67	4.33

Standard Deviation

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Novice	1.15	1.53	1.00	1.00	1.73	0.58	0.58	0.58
Expert	0.58	1.00	1.15	1.00	0.00	0.00	0.58	0.58

The first table shown above contains the average Likert rating for each question answered by the participants in their reaction survey. The second table displays the standard deviation of the results for each question from the reaction survey.

16. Reaction Survey Results

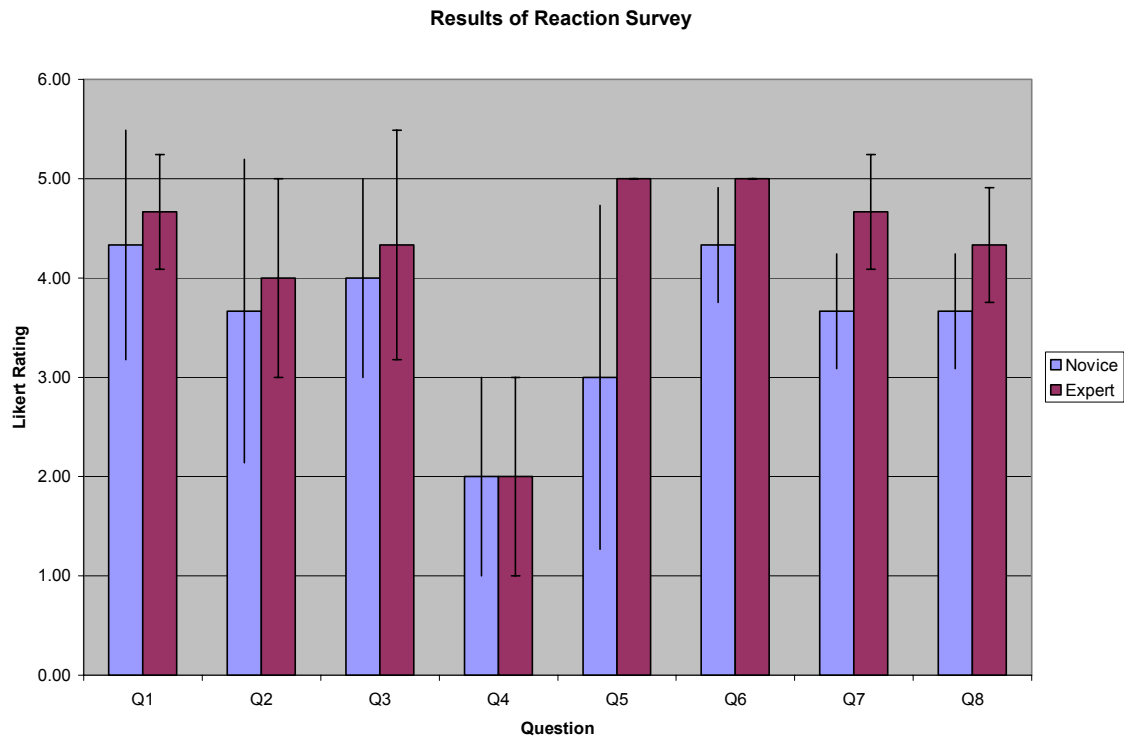


Figure 13

The graph above shows the average Likert rating of both novice and expert users for each question from the reaction survey.

V. Conclusions

1. Overview

The data generated show a large difference between the technical users and the non-technical users. Generally, the technical users had fewer problems that were mostly associated with limitations of the prototype (i.e., they were trying to do more advanced actions). The non-technical users had a tougher time with the system. They took longer to complete tasks and made more errors.

After each participant was finished with the four scenarios, they were asked what they thought of the site. There was a common theme among technical and non-technical users' responses and a general feeling that they liked the site. Technical users were slightly more concerned with the positioning of links and navigation while non-technical users were slightly more confused yet at the same time happy because the site was aesthetically pleasing or "It looks cool." The technical group mentioned often in conversation after the interviews that the visual display of the job search was "awesome" but also difficult to use.

The non-technical users strongly disliked the same visual display and had great difficulty navigating through it. "It was a little too much for me" was participant 1's response. Both groups appreciated the aesthetically pleasing aspects of the site and felt that overall the site was well designed and easy to use. The technical users appreciated much of the "fancy" technical steps taken to enhance the site while the non-technical users were fairly stuck on the "cool" look of the site. All participants thought that the site was broken down well and there was not too much information displayed at once.

The large difference between the technical users and non-technical users' results shows that the system was acceptable, for the most part, for technical users. There is a need to redesign areas where non-technical users made errors to allow for more error prevention.

Upon completion of the first empirical usability test of the NASA Career Information System, many issues have been related to the team regarding not only the system, but also about the test itself. The team discovered that there were a few ways to improve the testing process, as well as the system.

2. Proposed System Changes and Enhancements

- **Tabs between listing and visual**
 - Two participants (one technical and one non-technical) had problems finding the tab to get to the visual interface. One user clicked the ‘Search Jobs’ navigation link again, thinking they missed something.
- **Logo at the top of the page should be link to home page**
 - Many participants attempted to click the image in the header to return home. This is an externally consistent method of allowing users to return to the home page that was not incorporated into this prototype
- **Visual display will allow users to click a specific job to get details**
 - The clickable region around the city names needs to be larger. Many participants had problems with clicking on the small text. Adjustments should be made to allow for errors.
 - Participants attempted to click the visual display to get detailed job information, but were unable to do so because of prototype limitations. The Flash interface would have been too complex to build out for a prototype. However, future, special purpose prototypes could be developed to allow for an empirical study of the visual interface.
- **Listing font sizes**
 - Data displayed in lists within tables should be larger. Many users took more time than expected to visually scan and find a specific title.

VI. Discussion

The usability test conducted generated valuable data that will help to redesign and improve the career system to make it more usable. However, a few areas of the study should be discussed.

1. Within-Subjects Testing

This study used within subjects testing to complete the analysis. This was a decision made by the team based on the belief that because only six participants were used, not enough data would be generated. Therefore, it was decided that each participant would complete each scenario. In order to avoid order bias, each participant also completed the scenarios in the same order. Generally, the scenarios got more complex as they went. This was helpful because as users began to get more comfortable with the site, the more basic tasks such as navigation became more natural. This allowed the user to focus on the new tasks and not get frustrated because they were making too many errors.

2. Partial Implementation Prototype

As noted above, some more experienced users tried to do more advanced actions such as clicking on images and headers, expecting results. The prototype generated did not support these actions. This showed a problem with having a site that looks finished, but does not have complete functionality. Many participants thought that they were using a complete system. Although this helps create the illusion that they were using an actual system, increasing the validity of the study, some users were disappointed with its limitations. In future studies, it would be important to ensure that the lessons learned from this study are incorporated into the next prototype, or that the site does not look so finished that users expect a complete system. Throughout this study, however, users were happy with the feedback given regarding the limitations of the site.

In addition, the use of special purpose prototypes could be implemented to test for specific areas users either had trouble with (such as the navigation) or wanted to see in more detail (such as the visual Flash interface).

3. Survey Questions

In future surveys, actual open ended questions should be incorporated, in addition to the general discussions held. This would create a more formal open ended response format that could be analyzed further than discussions notes. However, the tradeoff between formalized questions and open discussions is that in open discussions, team members can follow-up with other related questions, but may not cover all of the questions needed,

4. Validity

The participants of this study were all Penn State students from various backgrounds. Therefore, these participants could realistically represent three out of the four users of the

system; the exception being the NASA hiring personnel. Therefore, the results generated by this group of participants can be said to be valid for all but the NASA employee's scenario. However, even that part of the study can be said to be valid because, from a usability standpoint, even non-technical users unfamiliar with the processes were able to complete the tasks with minimal efforts.

VII. Appendices

Background Surveys

Reaction Surveys

Team Certifications

Background Survey

#1

13. What is your age? 22
14. What is your gender? Male
15. What is your nationality? American
16. What is your native language? English
17. What is your area of study? Biology
18. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with internet websites? 3
19. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with **interactive** internet websites? 2
20. Do you own a computer? Yes
 - a. If you own a computer, do you have internet access as well? Yes
 - b. If you have internet access, is it dial-up (modem) or high-speed (cable modem/DSL) Yes
21. How long have you been using the internet for? 5 years
22. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the current NASA website. 1
23. Have you ever applied for a position at NASA before? No
24. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the NASA organization? 2

Background Survey

#2

25. What is your age? 22
26. What is your gender? Male
27. What is your nationality? American
28. What is your native language? English
29. What is your area of study? History
30. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with internet websites? 4
31. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with **interactive** internet websites? 4
32. Do you own a computer? Yes
 - a. If you own a computer, do you have internet access as well? Yes
 - b. If you have internet access, is it dial-up (modem) or high-speed (cable modem/DSL) Yes
33. How long have you been using the internet for? 6 years
34. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the current NASA website. 2
35. Have you ever applied for a position at NASA before? 1
36. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the NASA organization? 4

Background Survey

3

1. What is your age? 22
2. What is your gender? Female
3. What is your nationality? American
4. What is your native language? English
5. What is your area of study? English
6. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with internet websites? 3
7. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with **interactive** internet websites? 3
8. Do you own a computer? Yes
 - a. If you own a computer, do you have internet access as well? Yes
 - b. If you have internet access, is it dial-up (modem) or high-speed (cable modem/DSL) Yes
9. How long have you been using the internet for? 4 years
10. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the current NASA website. 1
11. Have you ever applied for a position at NASA before? No
12. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the NASA organization? 3

Background Survey

37. What is your age? 21
38. What is your gender? Female
39. What is your nationality? American
40. What is your native language? English
41. What is your area of study? HRIM
42. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with internet websites? 5
43. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with **interactive** internet websites? 3
44. Do you own a computer? Y
 - a. If you own a computer, do you have internet access as well? Y
 - b. If you have internet access, is it dial-up (modem) or high-speed (cable modem/DSL) Y
45. How long have you been using the internet for? 5 years
46. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the current NASA website. 1
47. Have you ever applied for a position at NASA before? N
48. On a scale of 1 to 5 (with one being unfamiliar, 5 being quite familiar), how would you rate your familiarity with the NASA organization? 3

Rate each question on a scale from 1 to 5 with 1 being strongly disagree and 5 being strongly agree.

Brian Kressin

9. I was able to easily find the link for recommended courses 5
10. The visual job display allowed me to quickly determine characteristics of all jobs displayed. 5
11. I found the visual job display to be helpful 5
12. I found the visual job display confusing 1
13. I liked having multiple resume versions I could pick from 2
14. I was able to differentiate between the multiple resumes in my profile 5
15. I was able to easily navigate the new NASA website 4
16. I had little trouble finding information on the new NASA website. 4

Rate each question on a scale from 1 to 5 with 1 being strongly disagree and 5 being strongly agree.

Alicia Brennan

- 17. I was able to easily find the link for recommended courses 3
- 18. The visual job display allowed me to quickly determine characteristics of all jobs displayed. 2
- 19. I found the visual job display to be helpful 3
- 20. I found the visual job display confusing 3
- 21. I liked having multiple resume versions I could pick from 2
- 22. I was able to differentiate between the multiple resumes in my profile 4
- 23. I was able to easily navigate the new NASA website 3
- 24. I had little trouble finding information on the new NASA website. 3

ABBIE PISANO

Rate each question on a scale from 1 to 5 with 1 being strongly disagree and 5 being strongly agree.

- 25. I was able to easily find the link for recommended courses 5
- 26. The visual job display allowed me to quickly determine characteristics of all jobs displayed.5
- 27. I found the visual job display to be helpful 5
- 28. I found the visual job display confusing 1
- 29. I liked having multiple resume versions I could pick from 5
- 30. I was able to differentiate between the multiple resumes in my profile 5
- 31. I was able to easily navigate the new NASA website 4
- 32. I had little trouble finding information on the new NASA website. 4

Rate each question on a scale from 1 to 5 with 1 being strongly disagree and 5 being strongly agree.

Eric Lukavsky

- 33. I was able to easily find the link for recommended courses 5
- 34. The visual job display allowed me to quickly determine characteristics of all jobs displayed. 4
- 35. I found the visual job display to be helpful 4
- 36. I found the visual job display confusing 2
- 37. I liked having multiple resume versions I could pick from 5
- 38. I was able to differentiate between the multiple resumes in my profile 4
- 39. I was able to easily navigate the new NASA website 4
- 40. I had little trouble finding information on the new NASA website. 4