Usability Test Report:

SciStarter Citizen Science Campus Site

Prepared By: Sloan Hammer
Prepared For: Dr. Douglas Walls, Dr, Caren Cooper
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Executive Summary

Five usability tests were conducted on the NCSU Citizen Science Campus SciStarter site in order to learn more about the overall ease or difficulty with which users are able to accomplish tasks on the site. Tasks completed involved creating a SciStarter account, finding projects, and using the list feature. All participants fit with the student persona and were selected to complete the test between October 3-8, 2020.

There were five participants, all between the ages of 18 and 29 completing their degrees at five accredited institutions in either B.S. or M.S. fields. Sessions were all remote moderated usability tests on the desktop version of Zoom and lasted for roughly half an hour.

As a whole, I learned that the participants found the NCSU Citizen Science page hard to use with only 40% of the participants being able to create their account without committing a critical error, or an error that made it so the participant could not complete a task. On the other hand, the SciStarter site was generally really easy for the participants to navigate and complete tasks with, gaining much praise from all five participants. Most of the participants critiques oriented around things on the Citizen Science Campus and SciStarter sites that were not necessarily poorly designed, but could have been done better to prevent so many non-critical errors. Many errors and issues revolved around:

- Information Architecture
- Positioning of important information
- Confusing verbiage

The report contains insights on user experience including completion rates, ease of use ratings, time on tasks, errors, feedback details, recommendations, and overall site ratings.

Introduction

NCSU developed a collaboration with SciStarter to develop the NCSU Citizen Science Campus. The site enables NCSU students to get involved in citizen science projects in order to gain research experience, focus their interests, or just for something fun to do. SciStarter targets students of all ages, from elementary through college, to get involved with citizen science. In addition to the options given to young learners, companies, organizations, professors, or other research professionals can submit projects to the site to be completed by the countless interested minds.

The following testing was conducted in order to better understand how easy it is to use the NCSU Citizen Science Campus landing page as well as the SciStarter site for college aged students studying a science based discipline.

Problem Statement and Test Objectives

The usability test analyzed the core functions of the site with the core audience (students studying or interested in science). The aim was to better understand how well the students are able to find the information they want on the site as well as understanding if they are able to understand the organizational tools, such as lists, and how to use them to best aid in getting involved in projects.

Site Efficiency

- Can users find information about potential projects and what they need to do to participate in ones that sound interesting to them?
- Does the organization of the site enable users to reach their goals of using the site.
- How long does it take users to complete core tasks such as creating an account, learning project requirements, searching for projects, etc?

Site Effectiveness

- Do users understand what citizen science and SciStarter are and how they can get involved?
- Can users successfully complete core tasks of finding information, getting involved with projects, and learning about opportunities?

Site Engagement

- How do users rate their experience while finding information and completing core tasks?
- Do participants find using the site to be enjoyable or unpleasant? Why?

Site Tolerance

- What problems do users encounter while exploring potential projects and trying to use the organizational tools? How often do issues occur? Are there issues that happen more than once?
- Are users able to recover from errors and still manage to accomplish the given tasks? If not, what could help them recover/avoid the issue for future users?

Methodology

Recruitment

For recruitment, Iasked friends to put me in contact with individuals they knew pursuing science-focused degrees (for the sake of testing, this was defined by a B.S. or M.S. degree). I then sent each of the recommended participants the preliminary screener. From those that completed the screener, I selected the five that best fit with the student persona (**Appendix A**) and sent them an email as outlined below (**Appendix I**) with:

- A brief thank you for their agreement to participate
- An explanation of the recording consent form and a request to complete and email back (**Appendix E**)

- The brief explanation of the Citizen Science Sci Starter Site that was found on the site
- A generic Zoom link for the testing with a request to either set up a test time or a reminder of their selected test time

User Profile

Test participants were recruited based on their ability to best fit with one of the given personas. Details on the personas can be found in **Appendix A**. Answers from the Participant Recruitment Screener were used to choose participants and place them.

Undergraduate Student Studying Science (B.S. or M.S.)

- Current B.S. or M.S. Student at NC State or another accredited college or university.
- Has previously used an NC State website and has an NCSU email address
- Is able to log into the SciStarter site with either their NCSU or personal credentials
- Has not previously used the Citizen Science or SciStarter site.
- Has no prior experience with citizen science research.

NCSU Faculty

- Current Faculty member at NCSU
- Has previously used an NC State website and has an NCSU email address
- Is able to log into the SciStarter site with either their NCSU or personal credentials
- Has not previously used the Citizen Science or SciStarter site.
- Oversees students conducting research either formally or informally
- Has not previously used the Citizen Science or SciStarter sites

Community Members

- Someone not studying or employed by NCSU
- Has not previously used a NC State website and does not have an NCSU email address
- Is able to log into the SciStarter site with their personal credentials
- Has not previously used the Citizen Science or SciStarter site.
- Has no prior experience with citizen science research.

Test Participants

A total of five participants were selected and tested based on their screener results to take part in the Citizen Science Campus and SciStarter testing. All participants were either undergraduate or graduate students pursuing B.S. or M.S. degrees at accredited universities in the U.S. Details from the screener of each participant can be found in the following:

	Age	Position	School	Degree	Interested in C.S.?
P1	22-24	Graduate Student	Towson University	M.S. Speech Language Pathology	Unsure
P2	18-21	Undergraduate Student	Indiana University of Pennsylvania	B.S. Speech Language Pathology	Unsure
P3	22-24	Graduate Student	Pennsylvania State University	M.S. Food Science	Unsure
P4	18-21	Graduate Student	University of North Carolina, Charlotte	M.S. Mathematical Finance	Unsure
P5	25-29	Graduate Student	North Carolina State University	M.S. Technical Communication	Unsure

Table One: Screener Results

Participants 1-4 were tested over the course of two days, October 3 and 4, 2020 over Zoom calls. One test was conducted on October 3 and the other three tests were conducted on October 4. Participant 5 was recruited and tested last minute on October 8 due to a last minute drop out from the participant originally requested to participate.

Incentive

No incentive was required by any of the participants. All were willing to help out with my testing without compensation or reward.

Session

Each of the sessions were conducted remotely over Zoom with the participant in their preferred work or home space and lasted roughly 30 minutes. All participants fit with the student persona. Those who were unable to complete the consent form gave verbal consent (which was recorded with their permission) and were then given a verbal pre-test with results outlined below:

	P1	P2	P3	P4	P5
Are you a student at NC State?	**No**	**No**	**No**	**No**	**Yes**
Are you interested in and/or studying science?	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Have you ever heard of/ used SciStarter	**No**	**No**	**No**	**No**	**No**

Do you have any questions about the Citizen Science Campus Program/Sci Starter?	**No**	**No**	**No**	**No**	**No**
Would you be interested in taking part in a Citizen Science Campus Program? Why or why not?	**Yes**, depending on the qualifications needed	**Yes**, in order to help others	**No**, I do not think that this is something for me	**Yes**, I love meeting new people and learning new things from experts in other fields	**No**, because I do not have the time for something like this

Table Two: Pre-Test Questionnaire Results

Once the pre-test was complete, I began reciting the script (**Appendix C**) for the participants, and once I completed the introduction, I asked if they had any questions, answered any that arose, and then began with the tasks. The tasks that were given to each participant are outlined below in the Evaluation Tasks/Scenarios section. After each task, they were asked to rate the task on a scale of 1-5 with 1 being very easy and 5 being very difficult (**Appendix F**) and then elaborate on why they gave the task the rating that they did. The ratings as well as the elaboration of their answers can be found in the Results section.

The fail threshold for this testing was either someone inadvertently leaving the site and specifically asking for help because they were lost without being prompted or because they believed that they had completed a task but had not. Both fail thresholds were met at least once over the course of testing.

A post-test questionnaire outlined in **Appendix G** was then completed verbally with each participant. They were asked to rate how much they agreed or disagreed with each statement on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree. Finally, they were asked to rate the overall usability and aesthetics of the site on a scale of 1-5 with 1 being the worst and 5 being the best.

Evaluation Tasks/Scenarios

The following charts outline the scenario and tasks given to each participant. Participants were requested to complete six tasks over the course of the test with a distinct correct outcome. For each task, there was a "best way" as indicated by the secondary bullet following each task. Note, for my testing, the only persona scenario that was used was the student persona.

Student Persona Scenario: student who is interested in participating in citizen science projects in order to bulk their resume and focus their unique interests		
Task	**Task Description**	**Success Criteria**
1	Create a SciStarter account	Click “Click Here to Participate via SciStarter” > create account > successfully login
2	Find materials for the safe drinking water investigation (Crowd the Tap Initiative)	Scroll down on homepage > Click “Crowd the Tap” > Read materials needed
3	Find projects on COVID-19	Click “Project Finder” > Type “COVID-19” into word or phrase line > Click “find projects”
4	Select the first project and add it to your lists	Click the first project > click “Add to My Lists” > create a list > add to the list
5	Go to your lists and locate the project added	Click “Go to my lists” on the pop up that enables you to add to list OR click on “My Profile” > “My Lists”
6	Find projects the site recommends for you.	Click on “Dashboard” on the new sidebar” > scroll to the “Recommended for [insert username]”

Table Three: Student Persona Scenario and Tasks

NC State Faculty Member: Want to help students get valuable experience and enhance their resumes, by getting them involved in exciting citizen science projects and creating citizen science projects		
Task	**Task Description**	**Success Criteria**
1	Create a SciStarter account	Click “Click Here to Participate via SciStarter” > create account > successfully login
2	Find a project on COVID-19	Click “Project Finder” > Type “COVID-19” into word or phrase line > Click “find projects” > Select one of the projects
3	Find how to add a project to SciStarter	Scroll to bottom of page and select “Add Project/Event/Tool” > select “Add a project”
4	Find how to add an event to SciStarter	Scroll to bottom of page and select “Add Project/Event/Tool” > select “Add an Event”
5	Find the current list of Collaborators on	Click “Our Sponsors and Partners” at the bottom of

	SciStarter	the page
6	Find projects the site recommends for you.	Click on “Dashboard” on the new sidebar” > scroll to the “Recommended for [insert username]”

Table Four: NC State Faculty Member Scenario and Tasks

Community Member: Interested in learning more about potential citizen science projects to be a part of as well as create opportunities to have students work with your company.		
Task	**Task Description**	**Success Criteria**
1	Create a SciStarter account	Click “Click Here to Participate via SciStarter” > create account > successfully login
2	Find a project on COVID-19	Click “Project Finder” > Type “COVID-19” into word or phrase line > Click “find projects” > Select one of the projects
3	Find information on getting affiliated	Scroll down on homepage > Click “Get Affiliated”
4	Find what a SciStarter affiliate is	Scroll down on the “for researchers page” ie the page you should currently be on
5	Find how to add a project to SciStarter	Scroll to bottom of page and select “Add Project/Event/Tool” > select “Add a project”
6	Find the current list of Collaborators on SciStarter	Click “Our Sponsors and Partners” at the bottom of the page

Table Five: Community Member Scenario and Tasks

Results

There were several parameters that subjects were being measured on over the course of their testing including:

- Task completion rate - How often participants were able to successfully complete a task
- Time on task - Number of seconds to complete each task
- Number of errors - Non-critical: could still complete tasks. Ex. extra clicks; Critical: unable to complete task
- Self-reported rating of the task difficulty - Participant rating on scale of 1-5 (one being easiest and five being most difficult) for each task.

These parameters as well as unique subject feedback are outlined below followed by an explanation of the data.

Summary of Data

Below is the mean (averages) of each set of data for the three tests outlined and depicted in the above charts. The table below outlines the average number of subjects to complete the given task, how difficult they found the task to be, how much time was spent completing the task, and how many errors were made while working to complete each task.

Task One: Create a SciStarter account				
Participant	**Time on Task**	**Errors**	**Success**	**Difficulty**
Participant One	128 sec.	6	**X**	2
Participant Two	96 sec.	7	✔	3
Participant Three	129 sec.	0	✔	2
Participant Four	108 sec.	5	**X**	2
Participant Five	111 sec.	4	**X**	2
Averages	114.4 sec	4.4	40%	2.2
Task Two: Find materials for the safe drinking water investigation (Crowd the Tap Initiative)				
Participant	**Time on Task**	**Errors**	**Success**	**Difficulty**
Participant One	153 sec.	5	✔	1
Participant Two	21 sec.	0	✔	1
Participant Three	21 sec.	0	✔	2
Participant Four	36 sec.	1	✔	2
Participant Five	106 sec.	6	✔	3
Averages	67.4 sec.	2.4	100%	1.8
Task Three: Find projects on COVID-19				
Participant	**Time on Task**	**Errors**	**Success**	**Difficulty**
Participant One	115 sec.	4	**X**	2
Participant Two	34 sec.	1	✔	1
Participant Three	17 sec.	0	✔	1
Participant Four	43 sec.	3	✔	1
Participant Five	18 sec.	0	✔	1
Averages	45.4 sec.	1.6	80%	1.2
Task Four: Select the first project and add it to your lists				
Participant	**Time on Task**	**Errors**	**Success**	**Difficulty**
Participant One	26 sec.	0	✔	1
Participant Two	77 sec.	17	✔	2

Participant Three	34 sec.	0	✔	2
Participant Four	41 sec.	4	✔	2
Participant Five	36 sec.	0	✔	1
Averages	42.8 sec.	4.2	100%	1.6
Task Five: Go to your lists and locate the project added				
Participant	**Time on Task**	**Errors**	**Success**	**Difficulty**
Participant One	126 sec.	17	✔	2
Participant Two	5 sec.	0	✔	1
Participant Three	148 sec.	10	✔	5
Participant Four	16 sec.	0	✔	2
Participant Five	41 sec.	0	✔	1
Averages	67.2 sec.	5.4	100%	2.2
Task Six: Find projects the site recommends for you				
Participant	**Time on Task**	**Errors**	**Success**	**Difficulty**
Participant One	7 sec.	0	✔	1
Participant Two	11 sec.	0	✔	1
Participant Three	30 sec.	5	✔	3
Participant Four	32 sec.	0	✔	2
Participant Five	38 sec.	1	✔	2
Averages	23.6 sec.	1.2	100%	1.8

Table Six: Data Collected During Usability Testing Tasks

Errors

The Litmus for what is defined as an error is the number of additional clicks needed to complete a given task beyond the minimum quantity. See Evaluation Task/Scenarios above to see details of the “ideal” test. Any additional clicks, or an “alternative action sequence”, beyond the above would be listed as an error on the chart below. There was no time limit assigned to the tasks, and all tasks that were ultimately completed were completed within a timely manner.

A critical error in the testing would be defined as the participant either requesting and then seconding that they needed help with the completion of a task or believing that they had successfully completed a task when they had actually not completed the task successfully. An example of this was while creating their account, one participant navigated to the NC State login, tried to login and when they realized they were at the wrong place, asked me to help them complete the task.

Participant Feedback

The biggest issue that led to the most failures was the syntax surrounding creating an account/logging in when starting on the NCSU Citizen Science Campus landing page. 3 out of 5 participants selected the "log in" button located at the bottom of the page and proceeded to try and log in this way. Participant 4 even stated "Log in seems like a logical place to start" before proceeding in this way.

Two participants then asked for help and gave up on the task once they knew that the NCSU login would not enable them to create a Scistarter account. They both quit since they could not figure out how to get back to the page where the login option for SciStarter was located.

The third participant got back, but then used the search bar to try and find the log in and eventually also gave up and asked for assistance.

With the creation of lists, there were no critical errors, but lots of frustration with participant 2 saying "I do not know why that was so hard for me...making it an enter instead of a click might have helped or maybe I am just being dumb..." which is not the reaction someone should have when trying to do a seemingly basic task on a site.

Beyond this, the back button on their browser was used by 3 participants since they recalled a place where they may be able to find something but were unsure how else to get back. Other than the occasional hangup, participants claimed that they were able to learn while using the site, having almost no issues towards the conclusion of testing.

Task Completion Success Rate

All participants were able to complete 4/6 tasks without invoking one of the fail thresholds. The longest time was seen with the first task of setting up an account, which also saw the highest failure rate of 60%, as detailed in the chart below. After completing several tasks, some participants were able to learn from prior mistakes to be more efficient later. For task one, three of the participants wandered away from the page and without being prompted asked for help so they could create their accounts and manage the rest of the test. One participant avoided the project search feature and opted for the search bar feature which did not enable them to find the projects requested from task three.

Participant Feedback

Participants 1, 2, and 4 all independently commented on how maneuvering the site became easier with time. Becoming lost on one task later led to each of them remembering a site feature and being able to complete a task extremely quickly. Participant 1 specifically stated that "I knew exactly where to find [recommendations] since I stumbled past it multiple times while looking for my lists".

Participant 1 was really drawn to the search bar saying “Wow, there are a lot of projects, the search bar makes it really easy to maneuver I think” and that is “Seems like it could even be easy for kids”.

Time on Task

All participants were able to reach some result for all of the tasks, even if it was with necessary help or if they did not reach the right place. The longest average time by far was in the creation of each participant's SciStarter account from the NCSU Citizen Science landing page. From here, the average task time decreased over the course of testing as multiple participants noted that they felt they became more comfortable with the site the more they played around with it and got their bearings. Because participants became more comfortable with the site, the instances of serious errors decreased.

Participant Feedback

The biggest issue throughout the test was that participants were often confused with the manner of completing tasks. Participant 3 even stated “It is not that the tasks are hard to complete, it is just that they are not what you would expect which just makes them unnecessarily frustrating” when working to add something to their lists.

Task Difficulty Ratings

After each task, participants were asked to rate on a scale of 1-5 with 1 being the easiest and 5 being the most difficult and then explaining their answer as outlined in **Appendix F**. Even as participants became more comfortable with the site and were able to complete tasks more quickly and efficiently, the overall difficulty rating did not see the same consistent decrease. As a whole, participants found the tasks simple, but still saw room for improvement.

Participant Feedback

As a whole, participants found the site easy to use after powering through some confusion early on. Through the testing, participants were able to get their bearings and complete almost all tasks.

From here, several participants noted that although tasks might not have necessarily been hard, they also could have been done better, which is why many tasks got a rating of 2, somewhat easy, on many tasks instead of a 1, very easy. The most common instance of this was with the account creation where “there should have been two links, one to create an account and one to log in. The verbiage “‘participate’ did not lead me to believe that is where I went to create an account,” and with list creation where “..at first [they] did not see the list addition tool, but then I just kept clicking trying to figure it out. Eventually, when I did, I was just annoyed”. Critiques about finding lists were also plentiful, but as seen in the following section, this has been rectified.

Consistency Issue in Testing

While testing, there was a several day gap between my first four tests and my fifth and final test. In this timeframe, there was an update made to the site that greatly improved the usability of the list feature. Previously, participants had to either click on “Go to lists” located on the pop-up window that appeared when adding an item to your list or navigate to their dashboard and scroll to the bottom of the menu to find a link to their lists. In the words of participant 3, “With the lists, it would be easier just to re-search for the projects you like every time than mess around with how it is''. Both were difficult to navigate for participants 1-4 (quick times were only for those that happened to notice this feature when adding to their lists).

In the update, however, there is now a tab titled “Lists” under the dashboard header. The addition of this option made it much easier for participant 5 to complete the task and likely would have made things much easier for the other four participants as well. The images below display the change.

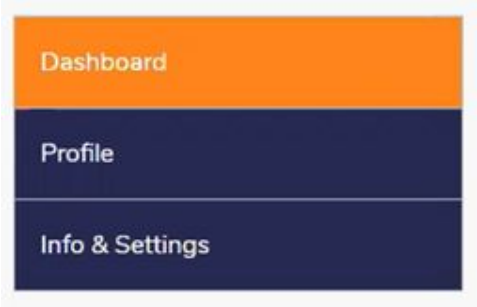

Figure One: Original Dashboard

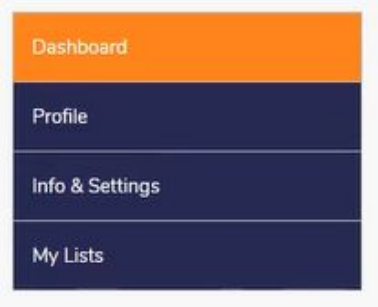

Figure Two: New Dashboard

Overall Site Feedback

After the completion of the testing, each subject was asked to reflect and give feedback on the testing they had just completed and evaluate different aspects of the site by rating them on a scale of 1-5 with one being strongly disagree and five being strongly agree.

Post Test Questionnaire

Adapted from: Perlman, G. (2018, October 9). *Computer System Usability Questionnaire*. Garyperlman.Com/. https://garyperlman.com/quest/quest.cgi

Rate on a scale of 1-5 where one is completely DISAGREE and 5 is completely AGREE

Post-Test Questions	P1	P2	P3	P4	P5	Average
1. I found the system easy to use.	4	5	3	5	4	4.2
2. I can easily complete work using SciStarter.	3	4	3	5	5	4.0
3. I can complete work quickly using SciStarter	5	5	2	5	4	4.2
4. I can efficiently complete my work using SciStarter	3	4	3	5	4	3.8
5. I am NOT comfortable with the SciStarter site	1	2	4	1	1	1.8
6. It was difficult to learn to use SciStarter	2	1	3	1	2	1.8
7. I feel it took me awhile to become productive using SciStarter	3	1	3	1	2	2.0
8. SciStarter made it clear how to fix my problems on the site.	2	3	1	5	3	2.8
9. I was able to recover easily from any mistake I made while using SciStarter.	4	4	4	5	5	4.4
10. It was difficult to find the information I needed	3	2	4	1	2	2.4
11. The organization of information on SciStarter is clear	3	4	3	5	4	3.8
12. SciStarter has a pleasant interface	4	5	4	5	5	4.6
13. Overall, I am satisfied with SciStarter	4	5	3	5	5	4.4

Table Seven: Post-Test Questionnaire Results

After the completion of the post test, subjects were asked to:

- Rate the overall usability of the site on a scale of 1-5 with 1 being the least usable and 5 being the most usable.
- Rate the overall aesthetics of the site on a scale of 1-5 with 1 being the least aesthetically pleasing and 5 being the most aesthetically pleasing.

	Usability	Aesthetics
Participant One	3	5
Participant Two	5	4
Participant Three	4	3
Participant Four	5	5
Participant Five	4	4
Average	4.2	4.2

Table Eight: Overall Usability and Aesthetics Ratings from Participants

Recommendations

Changes and Updates

Redesign the NCSU Citizen Science Campus landing page

- The current statement "Click Here to Participate via SciStarter" confused participants since they did not know if it was to log in or create an account or both. To fix the confusion:
    - Have there be two buttons to select instead of one.
        - Button to log in (if you already have a SciStarter account
        - Button to create an account (if you do not already have one)
            - Several participants indicated that having the two options is the convention that they expected based on other sites where they had to create an account.
- Multiple participants struggled to even find the button to link to the SciStarter site
    - Move the button to login/create a new account to the top of the landing page so users do not have to scroll to find this information
        - Have the two buttons (one to login and one to create an account) at the top of the page
            - 3 out of 5 participants were unable to locate the account creation link on their own. The failing participants either tried to use the site's navigation to search for the link or use the NCSU login located in the bottom banner. Was much more difficult than it needed to be.

Adjust how the list tool in SciStarter is used

- Adjust the list addition pop-up to be more user friendly
    - Increase the size of the list addition pop-up screen so that one can see all of their options the entire time using the tool
        - Currently when creating or adding to a new list, one can not see the rest of the screen.

            - Several participants struggled to go to their lists or effectively use the tool since it felt clunky
            - One participant made over a dozen additional clicks when trying to make sense of the tool.
- Have participants be able to click “enter” after selecting their list instead of having to manually click
    - Two participants had to make extra clicks since they would hit enter after adding their list name and then lose their spot
        - Hitting enter felt more intuitive for all five participants, since all hit enter on their first go, but two struggled more to get their head around this.
- Add a tab in the Dashboard that takes one right to their list
    - Only one participant was able to navigate to their list from the option under the original dashboard design.
        - All four participants (sans participant five who took the test after the redesign) commented on how their should be a distinct tab under the dashboard for lists
            - One participant commented “with how it is now, it would be faster to just re-lookup each project each time”

NOTE: This has been done since testing was completed

Appendices

Appendix A: Skeletal Personas

Student

As a **student at NC State student studying science**, I want to **gain experience through a campus program**, by **getting involved in citizen science projects on SciStarter**, in order to **prepare myself for a career after graduation through practical experience and networking**."

Faculty Member

As a **NC State faculty member who oversees students doing research**, I want to **help my students get valuable experience and enhance their resumes**, by **getting them involved in exciting citizen science projects**, in order to **help them be as competitive as possible when entering life after graduation.**

Community Member

As a **Community Member**, I want to **learn more about citizen science projects offered to students as well as see if there is a way my company could connect with students through SciStarter**, by **exploring the current offerings and portal**, in order to **take advantage of this unique opportunity to connect with students.**

Appendix B: Recruitment Screener

Hello,

My name is Sloan Hammer, and I'm a graduate student in NC State's M.S. in Technical Communication program. I'm working on a project to improve a university website, and I'm looking for users who can try out the site and provide feedback.

Please complete this short questionnaire if you're interested in participating in this study. If you qualify, I'll ask you to participate in a single ≈45-minute testing session over Zoom.

If you have questions, please feel free to contact me via email: sihammer@ncsu.edu..

First Name: _____

Last Name:_____

Email: _____

Gender:
- Female
- Male
- Other _____

Are you able to use Zoom?
- Yes
- No

If selected to participate, are you willing to have the session recorded?
- Yes
- No

What is your age?
- Under 18
- 18-21
- 22-24
- 25-29
- 30-34
- 35-39
- 40+

Do you have a role at an accredited university?
- Faculty
- Staff
- Undergraduate Student
- Graduate Student
- Other _____

Are you interested in science?
- Yes
- No

Have you used the SciStarter website before?
- Yes
- No

What kind of degree are you pursuing?
- B.S.
- M.S
- B.A.
- M.A.
- Other_____

What do you study? _____

What university and college do you study at? _____

Appendix C: Moderator Checklist and Script

Before Participant Arrives

 Check audio/visual settings on computer
 Set up screencast software (Zoom meeting).

Pre-Test Activities

 Introduce myself and thank the participant for coming and participating in the test.

 Ask the participant to get comfortable, in front of the laptop, while being in view of webcam.
 Explain the purpose of the test: **"Today, we'll be conducting a usability test. A usability test helps assess what works and what doesn't with a product or technology. The technology we'll be testing is the website for the Citizen Science Campus SciStarter. You will be taking the perspective of a student who is interested in participating in citizen science projects in order to bulk your resume and focus your unique interests. I won't be offended by any feedback or suggestions you offer; I'm open to any and all feedback. Also, I want to stress that this test is not an assessment of your ability; it's an assessment of the website. I'm only interested in how the product and your experience can be improved."**

 Todays testing will be completed over Zoom, including the recording.

Instructions

 Explain the testing process and scenarios: **"OK, here's how the testing process will work. In a minute, I'll present you with scenarios that prompt you to complete a task on the website. I will be taking notes while you complete the tasks, so do not be concerned if you see me writing."**

 Explain "think-aloud" protocol: **"As you work through each task, I will remind you to "think out loud," or describe out loud everything you're thinking about or doing. Just as an example, if someone asked me to "think out loud" while trying to open email on my phone, I may say something like, "I have to pull my phone out of my pocket...I hate how I have to enter my password to get into my phone, etc. You can say whatever you want, good or bad, even things like, "I don't understand this task...this website is hard to navigate…I love the website's navigation."**

 Explain the post-task and post-test questionnaires: **"After each task, I'll ask you follow-up questions. After testing is over, I'll ask you to complete one more questionnaire, in which you'll rate and respond to your overall experience with the SciStarter site."**

 Questions: **"Do you have any questions before we begin?"**

During Testing

 Turn on microphone and start screen capture solution recording. **"I will now begin recording the test"**

 Retrieve observation form and prepare to start logging.

 Start FIRST TASK SCENARIO: **“OK, let’s get started with the first scenario. Can you log in or create a SciStarter account?.”**

 Do post-task questionnaire (verbal) for first task.

 Start the SECOND TASK SCENARIO: “**Can you find the materials needed to join the investigation of safe drinking water (Crowd the Tap initiative)**?”

 Do post-task questionnaire (verbal) for second task.

 Start the THIRD TASK SCENARIO: “**Can you find projects on COVID-19?**.”

 Do post-task questionnaire (verbal) for third task.

 Start the FOURTH TASK SCENARIO: “**Can you select the first project and add it to your lists?**.”

 Do post-task questionnaire (verbal) for fourth task.

 Start the FIFTH TASK SCENARIO: “**Can you go to your lists?**.”

 Do post-task questionnaire (verbal) for fifth task.

 Start the SIXTH TASK SCENARIO: “**Finally, can you find me some projects the site recommends for you?**.”

 Do post-task questionnaire (verbal) for sixth task.

 Reassure and remind participants to “think out loud” before and after each task scenario.

Post-Test

 Have participants fill out post-test questionnaire and ask follow-up questions: **“Thanks for going through those scenarios. That was great. Now, I have one more questionnaire for you. On this one, I’d like you to rank the ease or difficulty of each task and answer a couple of other questions.”**

 Have them complete the Post-Test Questionnaire

 Thank participant again, and let them know testing is complete.

Appendix D: Pre-Test Questionnaire

For Students Participant

1. Are you a student at NC State?

   ☐ Yes ☐ No, Other_____

2. Are you interested in and/or studying Science?

   ☐Yes, Studying _____ ☐No, Studying _____

3. Have you ever heard of/used SciStarter?

   ☐ **Yes**, I have heard of SciStarter
   ☐ **Yes**, I have used SciStarter
   ☐ **No**, I have never used or heard of SciStarter

4. What questions do you have about the Citizen Science Campus Program/Sci Starter?

5. Would you be interested in taking part in a Citizen Science Campus Program? Why or why not?

Appendix E: Blank Recording Consent Form

I agree to participate in the SciStarter Citizen Science Campus Site study conducted and recorded by Sloan Hammer

I understand and consent to the use and release of the recording by Sloan Hammer. I understand that the information and recording is for research purposes only and that my name and image will not be used for any other purpose. I relinquish any rights to the recording and understand the recording may be copied and used by Sloan Hammer without further permission.

I understand that participation in this usability study is voluntary, and I agree to immediately raise any concerns or areas of discomfort during the session with the study administrator.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date:_____

Please print your name: _____

Please sign your name: _____

Appendix F: Post Task Questionnaire

Please rate how easy or difficult it was to **Log in or create a SciStarter account**.
 1-very easy
 2-somewhat easy
 3-neither easy nor difficult
 4-somewhat difficult
 5-very difficult

Please rate how easy or difficult it was to **Find materials needed to join the investigation of safe drinking water**.
 1-very easy
 2-somewhat easy
 3-neither easy nor difficult
 4-somewhat difficult
 5-very difficult

Please rate how easy or difficult it was to **Find projects on COVID-19**.
 1-very easy
 2-somewhat easy
 3-neither easy nor difficult
 4-somewhat difficult
 5-very difficult

Please rate how easy or difficult it was to **Select the first project and add it to your lists**.
 1-very easy
 2-somewhat easy
 3-neither easy nor difficult
 4-somewhat difficult
 5-very difficult

Please rate how easy or difficult it was to **Go to your lists**.
 1-very easy
 2-somewhat easy
 3-neither easy nor difficult
 4-somewhat difficult
 5-very difficult

Please rate how easy or difficult it was to **find projects the site recommends for you.**
 1-very easy
 2-somewhat easy
 3-neither easy nor difficult
 4-somewhat difficult
 5-very difficult

Appendix G: Blank Post-Test Questionnaire

Adapted from: Perlman, G. (2018, October 9). *Computer System Usability Questionnaire*. Garyperlman.Com/. https://garyperlman.com/quest/quest.cgi

Rate on a scale of 1-5 where one is completely DISAGREE and 5 is completely AGREE

Post-Test Questions	P1	P2	P3	P4	P5	Average
14. I found the system easy to use.						
15. I can easily complete work using SciStarter.						
16. I can complete work quickly using SciStarter						
17. I can efficiently complete my work using SciStarter						
18. I am NOT comfortable with the SciStarter site						
19. It was difficult to learn to use SciStarter						
20. I feel it took me awhile to become productive using SciStarter						
21. SciStarter made it clear how to fix my problems on the site.						
22. I was able to recover easily from any mistake I made while using SciStarter.						
23. It was difficult to find the information I needed						
24. The organization of information on SciStarter is clear						
25. SciStarter has a pleasant interface						
26. Overall, I am satisfied with SciStarter						

Appendix H: Blank Observation Form

Participant Name:			**Date/Time of Session:**			
Task	Task Description	Time on Task	Errors	Success	Failure	Notes/Comments
1						
2						
3						
4						
5						
6						

Appendix I: Initial Email to Participants

Subject: SciStarter Usability Test Materials

Hello XXXXXX XXXXXX,

Thank you for agreeing to take part in my study investigating the usability of the SciStarter-NCSU Citizen Science site.

Attached is the recording consent form for the testing. Please complete if possible, but if unable, I can receive verbal consent during testing.

The following is pulled from the site, but can give you a brief idea of the site purpose before participating in testing:

"The site is the result of NCSU and SciStarter teaming up to help students accelerate research and discovery through citizen science. NCSU is the first university committed to creating a Citizen Science Campus where students will encounter citizen science in all aspects of student life, from the classroom to student clubs!"

The following is the generic Zoom link for the agreed testing time.

(Since we have not selected a time yet, I will be reaching out to you about this)

Topic: SciStarter Usability Testing (**Participant number so I could keep track**)

Join Zoom Meeting
Zoom Meeting Link Here