Usability Study on a Website Integrating Self Organized Learning Environments (SOLE) and Google Apps for Education (GAFE)

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https://sites.google.com/universitylaboratoryschool.org/solegafe/home_1

Abstract: This usability project was created to test a website designed for teachers to implement the pedagogical approach, Self-Organized Learning Environments (SOLE), developed by Sugata Mitra, and the technology suite, Google Apps for Education (GAFE). Mitra's School in the Cloud website, which facilitates SOLE sessions, lacks the ability to share and save student presentations easily. Adding this functionality was the primary reason for developing the website for this project. Google Sites was used to develop the website, taking into account design features which aid in a simple and effective user experience (Krug, 2010). Educators from the University of Hawaii at Manoa and teachers from the University Laboratory School volunteered to test the website's usability. Each participant was asked to go through a series of scenarios, resulting in revisions to further aid the usability of the website. After collecting the data, it was clear that certain features and wording needed to be changed to make the website more accessible, but the main features were easily understood once located, and users were able to complete the tasks they were presented. Through observations and interviews, the ability to run inquiry-based lessons and participate in a global community of students and teachers was evident. The conclusion reached through this usability study is to further develop the primary features tested, with the aim to integrate more seamless communication and sharing between users.

Introduction

The Self Organized Learning Environment (SOLE) method is a method of instruction which has focused supporting students in learning through well-framed questions, collaboration, and discovery. The use of the SOLE method offers these opportunities for students, supporting these essential attitudes for successful lifelong learning (Cobb,

2010). By leveraging the accessibility of the Internet in educational settings and the simplicity and power of the SOLE method, the potential for authentic learning and twenty-first century skill building is one which is ripe for development. This study aimed to determine the usability of a Google Site to facilitate a SOLE session integrating the Google Apps for Education (GAFE) platform for educators on Oahu.

Through a series of tasks which volunteer participants have performed, central features were tested, such as the simplicity of the navigation, the ability for users to find necessary information on how to integrate GAFE to a SOLE session, and the capacity to identify and complete the process for sharing materials created during a session. These features were central to understanding the overall usability of the site, which aims not to teach how to use the GAFE platform specifically, but to provide a space for those who conduct a SOLE session using GAFE, and to share and view the sessions of others ran around the world.

In creating this website, the possible impact of the synthesis these two tools have on teaching and learning is highlighted, further demonstrating to educators the potential of integrating web 2.0 tools, and student-driven inquiry-based learning. Oahu was an ideal place to test this website, as the GAFE platform has been introduced and used in many schools as twenty-first century tools, Internet access is readily available, and BYOD and prevalence of 1-to-1 programs being implemented.

Literature Review

In 1999, Sugata Mitra, Professor of Educational Technology at the School of Education, Communication and Language Sciences at Newcastle University, England, placed a computer in a remote village with Internet access and walked away. When children who had never had a computer, did not speak any English, or know what the Internet was, and were simply given all three, the results were astonishing. The children learned how to browse, taught themselves English to further operate the computer, were able to achieve levels of literacy consistently , and in some instances were able to use the Internet to explore and learn advanced concepts, such as DNA replication error causing diseases (Mitra, 2014). The leaving of the computer and subsequent results lead to the start of the Hole in the Wall project, where children were observed using the Internet to collectively learn about various topics. This later became central in the pedagogical approach developed for SOLE, focusing on groups working together around one device to answer a challenging question. Mitra has further studied this method to teaching and learning, and has observed a direct effectiveness, highlighting that children can learn ahead of what their age would typically suggest. Examples include retaining learning over time, enjoying the process and evoking further and deeper exploration of topics, and that while in groups, children can read and comprehend at higher levels than that of each in their group (Mitra, 2016).

Mitra's findings are not entirely new to the field of education, as John Dewey had been a major advocate for progressive education in the early 20th century; with the idea of a 'hands on' approach to education, students could naturally explore interconnected subjects, teachers acted as facilitators, and students worked in groups, presenting their findings (Dewey, 1910). In addition, Ken Robinson's TEDtalk illustrates the clear need for innovation in education (Robinson, 2006). The SOLE method supports this call for innovation through the minimally invasive and collaborative approach taken. By learning about topics which spark an individual's passion, placing emphasis on the importance of creativity and collaborative projects, Ken Robinson's vision for an education where "natural talent meets personal passion" (Robinson, 2009) and Dewey's approach to experiential learning in education can be fulfilled.

Technological literacy is also an essential aspect of the SOLE method, providing opportunities for students to expand their research skills and ability to analyze the quality of sources they are finding online. Technology in education is a frequent topic at TED conferences, drawing technologists, philosophers, and educators to give presentations on the matter. These individuals discuss the importance of using technology effectively in the classroom and demonstrate examples which have become a part of educational frameworks. Examples include Khan Academy's use of video (Khan, 2011), the need for open, collaborative learning in impoverished areas (Leadbeater, 2010), and the necessity of tools which give teachers real feedback (Gates, 2013).

Project Design

Sugata Mitra's School in the Cloud has focused on the use of the SOLE method and how to best implement this educational model in developing areas of the world. However, the tools provided to students to collect and present during a SOLE session are limited and does not offer all of the capacities which students with readily available Internet access and technology have come to expect. Examples of the current limitations of the tool are the inability to save content or easily share what was created. By leveraging GAFE as an established 21st century teaching and learning tool used in educational settings on Oahu, Hawaii, (Thornton, 2016), additional functionality and usability was integrated into a website developed for the purposes of this usability study. One example feature was the sharing of documents and images taken during the session through a dedicated page (Figure 1).

Figure 1: Dedicated section to view shared documents and files

Google Sites was used in the development of the website tested, as the integration with GAFE is built on the foundation of the application. Website and visual design elements were informed by Gestalts theory in interactive media design (Graham, 2009). The website can be found here: https://sites.google.com/universitylaboratoryschool.org/solegafe and is best viewed using an 'incognito window' on Google Chrome. The graphics and other resources used to develop the website are from open source locations (Inc, G. 2012) or are of simple geometric designs and are therefore in the public domain (Figure 2). Additionally, a plugin from Romain Vialard's website (Awesome-Table, 2016) has been used to integrate Google mapping software and spreadsheet data without the need to manually update the CSV file or custom map file for each new entry (Figure 3).
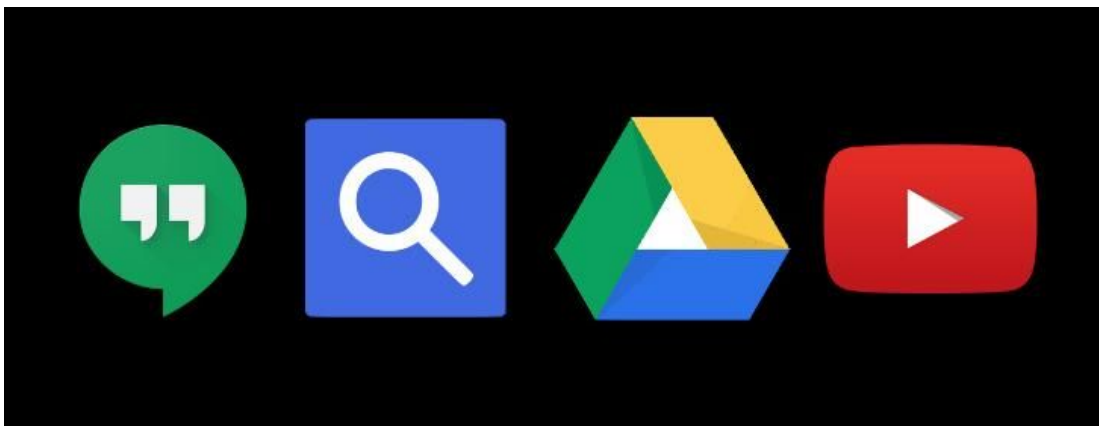

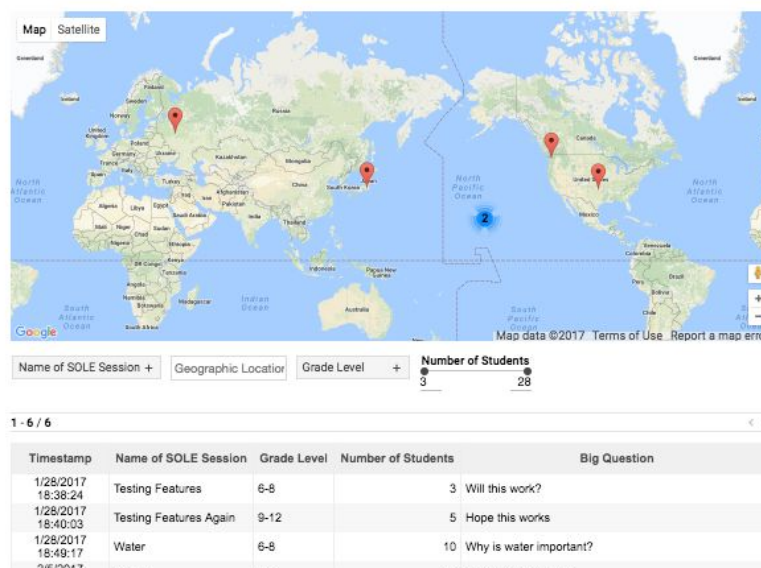*Figure 2:* Google icons and geometric figures

Figure 3: AwesomeTable mapping feature connected to spreadsheet data

In the development of the usability study, *Krug's Rocket Surgery Made Easy* was drawn from to develop processes and the necessary steps to conduct walkthroughs and scripts (Krug, 2010). Methods in usability testing while in person were also adapted from Krug's works (see Appendix A). Some restrictions and issues with usability studies were considered, specifically in regards to the aims of measurement, the subjectivity of data collection (Hornbæk, 2006), development of questionnaires and contact emails and the standardization and variety of tasks (see Appendix B).

Methods

As the target audience for the website was educators, the perceptions of educators when developing and refining the overall design of the website was crucial to assessing the functionality and usability of the key features. In attempting to address the usability of the website created, educators at the University of Hawaii (UH) at Manoa and University Laboratory School (ULS) were voluntary participants. Cohort members from the current and upcoming LTEC Graduate program, who are also educators, were also selected based on interest. Six participants were selected in total, all of which were at least 18 years of age or older, had Google Apps for Education experience, and were interested in participating, as determined by questionnaire (see Appendix C).

The central focus of the usability study was on the following research questions, "Is the navigation simple enough for users to find the necessary information to start a SOLE session?", "Is the information on how to integrate Google Apps for Education into a SOLE session clearly presented and easily found?", and "Are users able to share their relevant information, such as presentation files, photos, and geolocation?" These questions guided the usability study, in conjunction with the participants being asked to complete tasks which demonstrated their perceptions regarding the overall clarity and ease of use of the website's primary function and features (see Appendix D).

All testing sessions were conducted on the University Laboratory School's campus, in either unoccupied classrooms or in the teacher collaboration center. Six individual sessions were completed in a 1-to-1 format, with participants given both oral instructions, with written instructions for the scenarios also being available to read. During the usability session, the researcher conducted the session by reading through the script, asking the participant to think out loud as much as possible, and asking for clarification when necessary during the scenarios (see Appendix A). Observational data was also collected by the researcher in order to better identify when participants were struggling with the scenarios or had difficulty navigating to the correct location on the site. These observations and recordings were reviewed and coded based on related scenario, type of issue, and severity.

Screencastify (Screencastify, 2016) recordings of the participants use of the website were

also reviewed after each session, including a brief summary and analysis of the data collected. Observations, common issues and strengths regarding the website design were noted using a standard note taking format, helping to inform what changes needed to be made to improve the overall usability of the website (see Appendix E). After each 2nd session, the data is compiled and more thoroughly reviewed, grouping similar observations and problematic areas. These issues are then rated in severity, and possible solutions are documented. A rapid prototyping phase is then conducted to make changes to address the most severe issues identified (Tripp, 1990). This method is loosely related to the ADDIE model, with the researcher takes the information gathered, focuses on the most severe issues identified, reviews possible solutions, makes appropriate changes, reviews the changes with the issues identified, implements the changes before the next round of testing, and again collects information to determine if the issue was resolved.

Results

The collection of data occurred over the course of four weeks. Each participant completed a pre-survey, detailing their respective knowledge and familiarity with both SOLE and GAFE, as well as their educational background. All participants reported some experience in education, with the majority reporting over five years of teaching. Regular usage with the Google Apps for Education suite was also reported by all participants, with varying amounts of recent exposure (Figure 4). Items with five out of the six participants were Docs, Mail, Search, Sites, Slides, and Youtube.
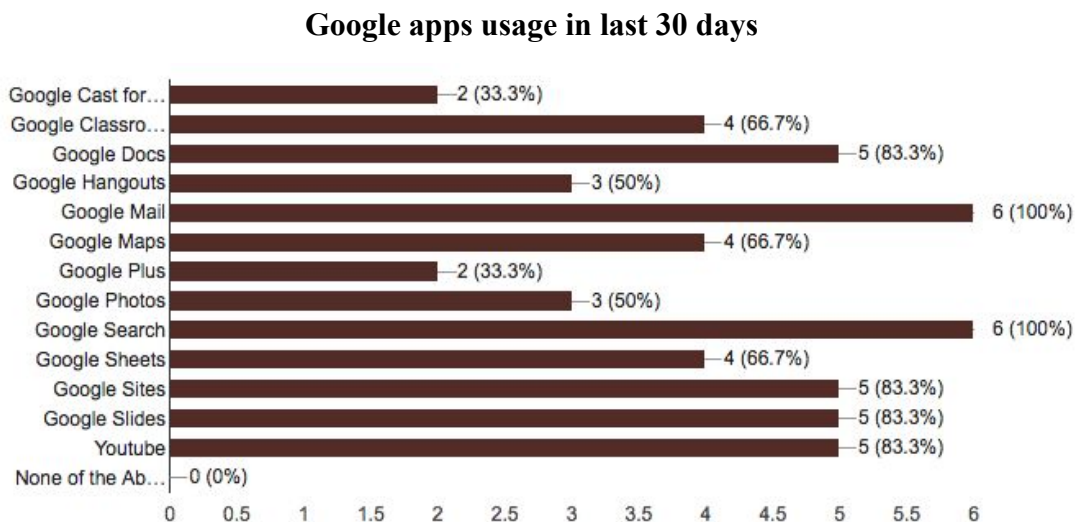
Google apps usage in last 30 days

Figure 4. (n=6) Reported usage of Google apps in the last 30 days

A majority of participants also reported a strong familiarity and usage of the GAFE suite in their daily lives. In contrast, the School in the Cloud and the Self Organized Learning Environments pedagogical approach were reported by a majority of participants as either

wholly unfamiliar or were neutral on the subjects, with only one participant having prior knowledge of both.

In further determining the characteristics of the participants, questions were asked at the start of the usability session regarding their pedagogical philosophy and their typical weekly Internet usage. On average, participants reported an estimated average of 42 hours a week of Internet usage, and all had some experience using online classroom management tools, such as Google Classroom, Managebac, and Hapara. The pedagogical approach taken by a majority of participants also reflected a student-centered, inquiry based approach to teaching and learning, with an emphasis on exploration and constructivist type activities.

Once users were asked to begin taking a look at the home page, observational data was obtained through the Screencastify recordings and notes taken during the session. Users were able to easily locate and navigate to each page and menu option, while there were at times issues with specifically which page would contain the necessary information to complete each task. For tasks one, three, and five, the titles of the pages and the specifics of the tasks made it difficult for users to quickly determine which page would be the correct one to navigate to. An example of this was when participants were asked to learn more about the SOLE method. On average half of the participants navigated to the correct page on their first attempt. The remaining users navigated to a page which contained information on how to start their SOLE:GAFE session. The similarity in these two pages did not provide very obvious clues to the participant that they were not on the correct page. Of these participants, two of the three eventually discovered the correct page but took nearly twice as long as the participants who navigated to the correct page initially.

Changes were made to the website, addressing the issues identified during each participant's session. As participants completed tasks two and four, minor problems with the functionality were determined to require revision. The primary issue concerned the ability of the data placed into the Google Form being able to populate the map on the Archive page of the site. While the map was able to be viewed, the data entered previously was not automatically updating the map (Figure 5). This mapping functionality was a central feature which was considered to be of vital importance. Changes were made to the form, the corresponding Google Sheet, as well as the map, to allow for the new data to be viewed instantly. More cosmetic changes and basic functionality alterations were made to images which did not fit properly or did not link to the appropriate pages.

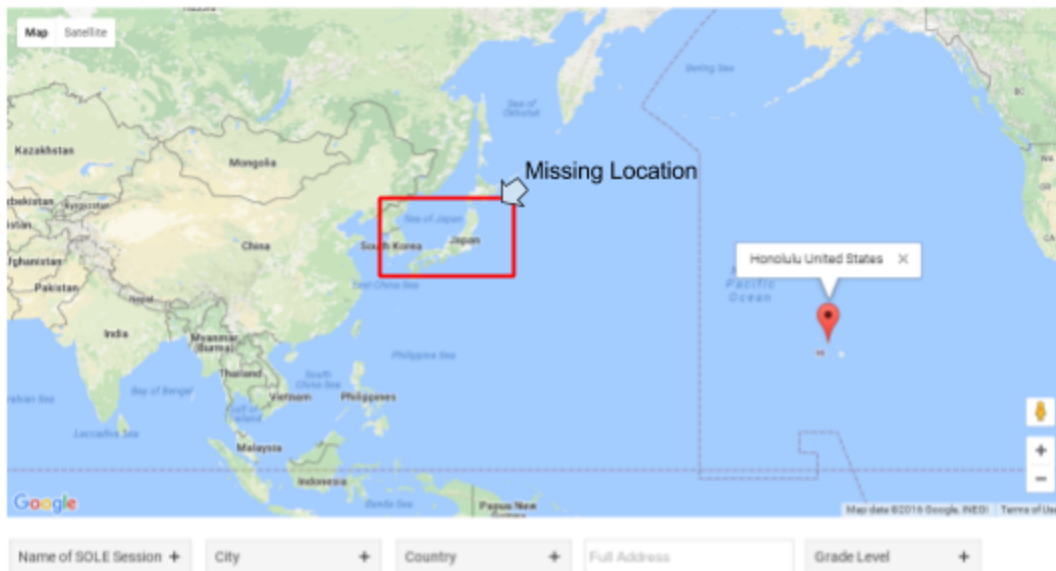## Previous SOLE:GAFE Session Locations

Figure 5. Mapping feature not correctly displaying form submitted data

Issues with the mapping feature also occurred during some users' experience; this forced them to either sign in, or not be able to view the collected data and viewed on the map (Figure 6). This occurred during two of the six sessions, with only one of these not correcting itself. An email notification from AwesomeTable was sent out describing the issue, stating that Google had made changes to the method of authenticating users, and there was nothing they could do on their end to fix this feature. Overall, the design was left as it was originally made in order to maintain consistency, requiring users to be logged into google to view the map.
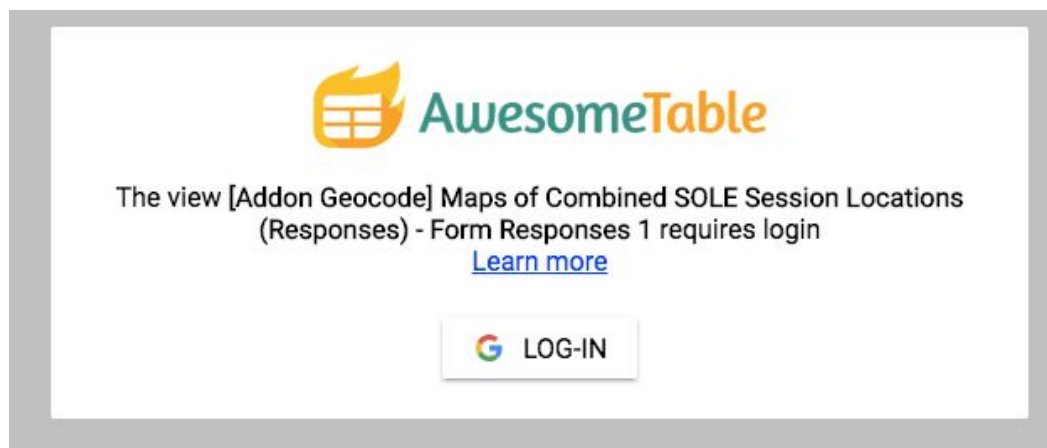

Figure 6. AwesomeTable Log-in error

Exit interviews were conducted with each participant as a part of the script used during the usability session, with questions being asked regarding their perceptions of ease of use, the mapping and sharing features, and whether they would recommend the site to their peers (Figure 7). All participants rated the ease of use as easy or very easy to use, commenting on the navigational menu being clear and easy to locate. All participants positively described the mapping features, mentioning the benefit of having an automatically updating mapping feature on a site like this. Over half of the participants also commented on their desire to be able to connect the map and the sharing features more seamlessly. In particular, being able to identify or locate both where in the world a SOLE:GAFE session is being held, but also being able to click on the geographic marker and have it bring up information more specific to that session. While some additional information is located directly below on the mapping feature, participants expressed their desire also to see the files or presentations shared which were completed during the session located on the map. The ability to embed additional information on the map is a feature which was not able to be implemented but would be highly beneficial if redesigned using a web application which was capable of this.
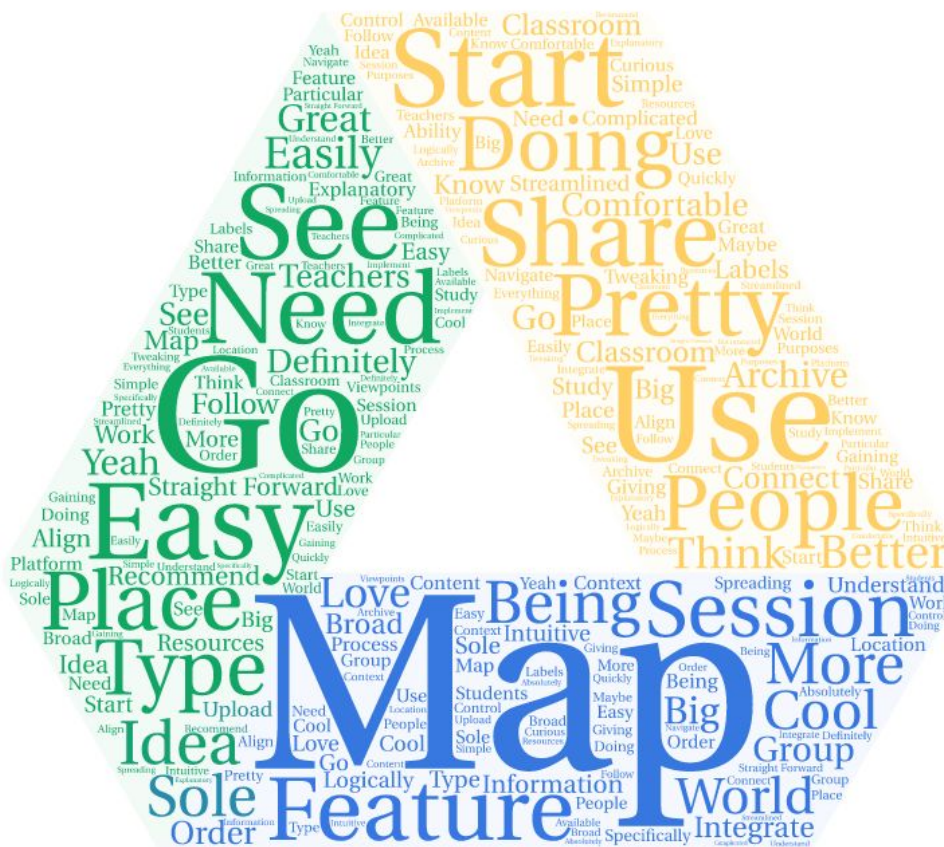

Figure 7. Wordcloud of exit interview responses and comments

When asked to rate the ease of use on a scale of one to five, five being very easy, participants answers were all four or five. Participants commented on the layout of the menu being able to be seen at all points, making it easy to understand where there are and where else they could navigate. Additionally, the organization of the information provided was said to be laid out in a simple and straightforward way. Some requests included providing additional information on the homepage on what the site was about or for. This suggestion was made during the last usability testing session, and if the site were to go through another iteration of redesigning, this information would be included on the homepage.

Discussion and Conclusions

The nature of learning and the ability for students to become self-motivated, independent learners is central to 21st-century skills. This website hoped to assist in taking full advantage of cloud-based applications and the vast resources found on the Internet, connecting students and educators abroad. By testing the overall usability of the key features currently missing from the School the Cloud website, additional functionality was added to a pedagogical approach which supports a progressive and future ready methodology to teaching and learning.

The users' positive feedback further demonstrated the desire for educators to be able to connect to others around the world. In designing a tool for teachers to use which can seamlessly connect students and classrooms from around the world, the SOLE:GAFE website provided a glimpse into the possibility which is present in 21st-century learning environments. Further work is needed to make this process more streamlined, as much of the sharing features required additional steps to make files available to the public.

A frequent comment made by participants was regarding the ease of navigating the site. The overall design and location of the menu were mentioned as being straightforward and clearly labelled. However, in some instances, the specific content within the menu items was not always clearly understood. Revisions were made to make this more clear, and resulted in less confusion and a more seamless experience.

Additionally, participants mentioned wanting to have the ability to easily connect the map locations to the files and presentations shared. In the current state of the Google Sites application, this was not possible. While AwesomeTable was used to integrate a map which can be automatically updated based on users submitting a form, it is was unable to link data submitted on a later date or time. If users submitted their presentation URL at the same time they were setting up their SOLE:GAFE session, it may have been possible to display this information; however, this process did not seem viable during the initial design phase. This issue will need to be reexamined at a later time to determine the overall viability of this feature.

In analyzing the comments regarding additional features, participants mentioned a more streamlined way of being able to share their questions and student presentations. The current method involved users sharing their documents with an external Google account, or uploading their files to an external site. While both of these methods were functional, they required additional steps for the users outside of the website. By integrating this directly into the website, or even within the process of setting up the session, additional ease of use could be added to the site.

In conducting a usability study, there are some suggestions which as the researcher, are pertinent to share. When using the screencastify recording software, or any recording software, be aware of the limitations and possible issues they bring to your recording. Screencastify as a free software is limited to 10 minutes per recording, thus possibly interrupting the flow of the recording session. Also, a watermark is placed in the top right section, where many navigational elements on websites can be found. Clarity in research questions is also an important factor to take time and consider deeply when designing your tasks and scenarios. The scenarios need to adequately provide information on the issues you are attempting to address with your usability study, otherwise they are not supporting your attempts to improve the site. Technical issues when testing may also arise; as the researcher you need to be able to ensure that all permissions and access to the website is setup appropriately. Having a participant start testing, only to be prompted to sign in, or being unable to view a page can dramatically hinder perceptions and ability of the users to complete tasks. In addition to being the researcher, you are also the designer. It is important to not get too involved in the project that you fail to see simple solutions. Throughout this project, I took care to not overly think the iterative improvements between each phase of testing.

Overall, the usability testing of the website's design used to facilitate the connecting of SOLE and GAFE suggested that the navigation was simple enough for users to find the necessary information to start a SOLE session. Additionally, the integration of GAFE into a SOLE session was stated as being clearly presented, and users were able to share information, such as presentation files, photos, and geolocation. Limitations which need to be addressed included the ability to connect information on the mapping system, and the ability to connect users more fluidly to relevant information on the process and function of the site.

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Appendix A
Krug's Usability Adapted Script

Technology Setup Checklist (Facilitator Computer)

1. Facilitator should set up his/her computer and attach all cords/peripherals - make sure to use a wired mouse
2. Plug in to a power outlet (don't trust the battery)
3. Make sure computer is connected to the Internet if you are using online resources
4. Prepare screencasting software and do a brief test to ensure
   a. Video of screen is captured
   b. Video from webcam is <u>not</u> captured
   c. Audio is captured

<u>After computer is set up:</u>

1. Load your website in whatever presentation software you choose to use.
2. Start the screencasting software

Facilitator Script

Hi, [insert participant's name]. My name is Matthew Baylor, and I'm going to be walking you through this session today.

Before we begin, I have some information for you, and I'm going to read it to make sure that I cover everything.

I am asking people to take a look at a website created to integrate the pedagogical approach outlined by Sugata Mitra - Self Organized Learning Environments (SOLE), and the Google Apps for Education (GAFE) suite. I would like to see what you think of it and how you think you would complete a few tasks with an interface like this. The session should take about 60 minutes.

The first thing I want to make clear right away is that we're testing the *SOLE.GAFE* website, not you. You can't do anything wrong here. In fact, this is probably the one place today where you don't have to worry about making mistakes.

As you complete the tasks, I'm going to ask you as much as possible to try to *think out loud*: to say what you're looking at, what you're trying to do, and what you're thinking. This will be a big help to us.

Also, please don't worry that you're going to hurt my feelings. I'm doing this to improve the site, so I need to hear your honest reactions.

If you have any questions as we go along, just ask them. I may not be able to answer them right away, since we're interested in how people do when they don't have someone who can help. But if you still have any questions when we're done I'll try to answer them then.

And if you need to take a break at any point, just let me know. Do you have any questions so far?

- ***Ask participant a few preliminary questions:***

OK. Before we look at the site, I'd like to ask you just a few quick questions.

1. What is your occupation? What do you do all day?

2. Now, roughly how many hours a week altogether—just a ballpark estimate—would you say you spend using the Internet, including Web browsing and email, at work and at home?

3. What experience do you have with online classroom management tools? If so, what websites have you previously used?

4. Can you briefly describe your pedagogical approach to teaching and learning?

OK, great. We're done with the questions, and we can start testing out the site.

- ***Have participants do a narrative of the website's' overall appearance for one or two minutes, at most:***

I'm going to ask you to look at this website's homepage, and tell me what you make of it: what strikes you about it, what you can do here, and what it's for. Just look around and do a little narrative. You can scroll around if you need to.

- ***Ask participant to complete a few specific tasks (be sure to give the participant a handout of the scenarios):***

Thanks for doing that. You did a great job. Now I'm going to ask you to try doing some specific tasks. I'm going to read each one out loud. You should have

received a copy of these before this study. Again, as much as possible, it will help us if you can try to think out loud as you go along.

Allow the user to proceed from one task to the next until you don't feel like it's producing any value or the user becomes very frustrated. Repeat for each task or until time runs out.

Scenarios ("tasks") for Usability Protocol

Thanks, that was very helpful. We are done with the main questions, but I have a few more general questions to ask you.

*==**Note:** If you ask yes/no, true-false, and ranking follow-up questions, be sure to follow up with questions about WHY. This is because design teams will ask, "Well, what was the cause? What exactly were they thinking when they answered this? How should the product design respond to this? Give us something we can use!"==*

1. On a scale of 1 to 5, with 1 representing very difficult and 5 representing very easy, how would you rate your experience during today's testing?
2. How would you describe the process for starting and sharing a SOLE session using this website?
3. How would you describe the mapping and sharing features and their functionality?
4. After participating in this study, would you recommend this website to any of your friends? Why?

That's the last question, Do you have any questions for me, now that we're done? I want to thank you for your time and willingness to be a participant in this study.

- ***Stop the screencasting software***

Appendix B
Contact/Recruitment Materials

Recruitment Email

SUBJECT LINE: Invitation to Participate in Research Study - UH Manoa
Aloha,

As you may know, I am creating a website for my Master's Project in the Learning Design and Technology Program in the College of Education at the University of Hawaii at Manoa. I am running a usability study on the website I have created to improve the overall functionality, and I am looking for people who may be interested in trying out a website related to integrating Google Apps for Education into a pedagogical approach called Self Organized Learning Environments, and giving feedback after using it.

What will I be doing in a usability study?
You will be asked to do several short tasks using a website. You will also be asked questions about your experience and perceptions of the website.

How long is a session?
One hour

When and where?
The study will be held [DAYS, DATES]. You will be asked to participate in person at Wist Hall, or the University Laboratory School, OR by Google Hangouts. No traveling is required as this is a remote study that will be performed online. You will be participating using You may participate using a computer provided you have installed the screen capturing software screencastify on your office or home computer.

Interested in participating?
Please reply to this email with your contact information or call me at 808.348.4492. I will send you a Google Form with some questions to help determine if you qualify for the study.

If you have any questions, please contact me at mbaylor@hawaii.edu.

Thank you for interest,

Matthew Baylor
Graduate Student, University of Hawaii at Manoa

Consent to record form (to be included with confirmation email)

Appendix C
Questionnaire/Pre Survey

Section 2 of 3

Part Two: Background

Description (optional)

Please indicate which of the following online applications you have used in the last 30-days   *

☐ Google Cast for Education

☐ Google Classroom

☐ Google Docs

☐ Google Hangouts

☐ Google Mail

☐ Google Maps

☐ Google Plus

☐ Google Photos

☐ Google Search

☐ Google Sheets

☐ Google Sites

☐ Google Slides

☐ Youtube

☐ None of the Above

Please indicate the amount of teaching experience you have *

○ 0-1 years

○ 2-5 years

○ 5+ years

Please indicate any of the grade levels you have taught or are currently teaching *

☐ K-5

☐ 6-8

☐ 9-12

☐ Post Secondary

After section 2   Continue to next section   ▾

QUESTIONS   RESPONSES

Part Three: Familiarity

Description (optional)

How familiar are you with using Google Apps for Education in the classroom?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Use daily

How familiar are you with sharing Google features?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Use daily

How familiar are you with the School in the Cloud, created by Sugata Mitra?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Use daily

How familiar are you with the Self Organized Learning Environments pedagogical approach?

	1	2	3	4	5	
Not at all	○	○	○	○	○	Use daily

Thank You!

Thank you for your time and responses. All the information from the survey is confidential and will not be shared other than the purposes for this research.

Appendix D
Usability Tasks

Scenarios ("tasks") for Usability Protocol

Scenario 1

You are a teacher who has come across this website not knowing anything about Self Organized Learning Environments. How would you use this website to familiarize yourself with the subject?

Navigation and Information Presentation
1. Explain how you navigated this process.
2. Explain what you are seeing during this process.
3. Explain what you are thinking about as you are going through this process.

Scenario 2

After you have familiarized yourself with the SOLE method, how would you find information on how to integrate the Google Apps for Education suite into your use of SOLE sessions?

Clarity of Information
1. Explain how you got to the correct page.
2. Explain what you are seeing during this process.
3. Explain what you are thinking about as you are going through this process.
4. Explain how you think GAFE and SOLE work together?

Scenario 3

You want to start your first SOLE session with your students, and are interested in sharing your classes location and Big Question. How would you go about providing this information so others would be able to see this?

Sharing Features
1. Explain how you got to the correct page.
2. Explain what you were seeing during this process.
3. Explain what you are thinking about as you are going through this process.

Scenario 4

You want to find other SOLE sessions which have been completed using this website. Where would you go to find this information, and how might you learn more about the content of the SOLE sessions?

Sharing Features
1. Explain how you got to the correct page.
2. Explain what you were seeing during this process.

3. Explain what you are thinking about as you are going through this process.

Scenario 5
You want to share content from your student's SOLE session with the website. How would you go about providing this information so others would be able to see this?

Sharing Features
1. Explain how you got to the correct page.
2. Explain what you were seeing during this process.
3. Explain what you are thinking about as you are going through this process.

Appendix E
Note Taking System

Evaluation of Screencastify

By:

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Website tested:
SOLE:GAFE
[https://sites.google.com/universitylaboratoryschool.org/solegafe]

The purpose of this usability study will be to explore the ease of use The purpose of this research is to determine the usability of a Google Site to facilitate a Self Organized Learning Environment (SOLE) session integrating the Google Apps for Education (GAFE) platform for educators at the University of Hawaii at Manoa, with an intended outcome of allowing for the collection and sharing of information gained during the session

List of tasks our participants did

Task One:

You are a teacher who has come across this website not knowing anything about Self Organized Learning Environments. How would you use this website to familiarize yourself with the subject?

Task Two:

After you have familiarized yourself with the SOLE method, how would you find information on how to integrate the Google Apps for Education suite into your use of SOLE sessions?

Task Three:

You want to start your first SOLE session with your students, and are interested in sharing your classes location and Big Question. How would you go about providing this information so others would be able to see this?

Task Four:

You want to find other SOLE sessions which have been completed using this website. Where would you go to find this information, and how might you learn more about the content of the SOLE sessions?

Task Five:

You want to share content from your student's SOLE session with the website. How would you go about providing this information so others would be able to see this?

List of problems observed

After creating the list, rate severity based on this scale (Nielsen, 1995):

> 0 = I don't agree that this is a problem at all
> 1 = Cosmetic problem only: need not be fixed unless extra time is available on project
> 2 = Minor problem: fixing this should be given low priority
> 3 = Major problem: important to fix, so should be given high priority
> 4 = Catastrophe: imperative to fix this before product can be released

After rating severity, provide a brief (1-2 sentence) reason for why you rated the severity with that score]

List of recommendations for change based on the problems we identified

[Summarize the recommendations for change your team has identified. This is the most important part of this report, so you should make sure it is very clear. Feel free to use screenshots and other media to illustrate.]

Links to the YouTube videos of our studies
Subject 1: [URL for Google Drive video]
Subject 2: [URL for Google Drive video]

Link to our cognitive walkthrough protocol
[URL for protocol]
https://docs.google.com/document/d/1FkHLQtuFlVVgdjJzcpkbKhY1ARbBfudUx0RaA
DkSBnQ/edit