

## **Watershed UGA User Research**

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We conducted user research by asking both UGA students and local science teachers in the Athens Clarke County Area about local sustainability and the local watershed. We reached out to five local schools in the area and asked teachers if they would be willing to answer some questions about sustainability and how they conduct their classroom. Unfortunately, we did not get many responses from educators, but the responses we did get were very valuable.

After sending a request for a response, we sent a follow up email with seven questions to those educators who agreed to participate. The questions are below:

**Are you familiar augmented reality? If so, do you think it would be useful to you in a classroom setting?**

**As part of your curriculum, what do you teach your students about sustainability, especially local sustainability?**

**Do you utilize smartphones or ipads to teach in your classroom?**

**If there were a smart phone app about sustainability and the watershed in Athens, what type of features would you like to see?**

**Do you think your students would like to see a 3D model of Lake Herrick**

**What interactive elements do you use in your classroom?**

**What aspect of sustainability do you wish your students had the opportunity to learn more about?**

By asking these questions, we hoped to gain a better understanding of how technology is used in the classroom, what they teach their students about sustainability, and how we could position our app to be helpful in a classroom setting. A few teacher responses from Clarke Central High School Science Department are below:

**Mr. Gonzalez:**

Are you familiar augmented reality? If so, do you think it would be useful to you in a classroom setting?

*Yes I am. In a non-technical way, it is what good teachers do every day. If done well, where the focus is on the content and not the technology, it could be useful.*

As part of your curriculum, what do you teach your students about sustainability, especially local sustainability?

*Sustainability is the central theme of my AP course. Local issues are used as illustrations of the larger issues.*

Do you utilize smartphones or ipads to teach in your classroom?

*I use them only to augment the PLDs the students have been given.*

If there were a smart phone app about sustainability and the watershed in Athens, what type of features would you like to see?

*Access to real data: chemical, physical, and biological.*

Do you think your students would like to see a 3D model of Lake Herrick

*Yes, as long as it is built from the data I mentioned above.*

What interactive elements do you use in your classroom?

*Technological tools are ubiquitous in our classrooms. The kids are using it every day. This next week we will be using interactive virtual labs from Annenburg*

**Mr. Chumley:**

Are you familiar augmented reality? If so, do you think it would be useful to you in a classroom setting?

*Yes I am familiar with it. I think in some aspects it could be useful. It depends on what we would be working with.*

As part of your curriculum, what do you teach your students about sustainability, especially local sustainability?

*I teach environmental science, so we have an large chunk of content committed to local sustainability. Admittedly we do not focus on local sustainability as much.*

Do you utilize smartphones or ipads to teach in your classroom?

*Not usually. Students all have a personal laptop that we usually utilize.*

If there were a smart phone app about sustainability and the watershed in Athens, what type of features would you like to see?

*I would want it to be have a good user interface - one easy enough for children to understand. I would also want it to have data about each site. More than just one or two measurements.*

Do you think your students would like to see a 3D model of Lake Herrick

*Yes, something like that would be fun to work with especially if they've visited the lake before.*

What interactive elements do you use in your classroom?

*It depends on the lesson. Usually the most interactive days a lab days, which have a large variety of interactive elements.*

What aspect of sustainability do you wish your students had the opportunity to learn more about?

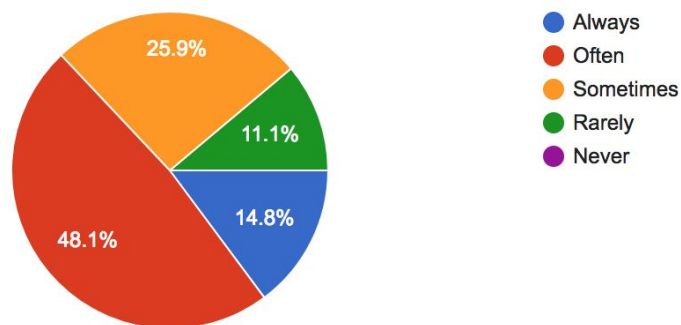
*Things they can do as an individual and how to live a sustainable life.*

We also learned from another teacher's response that students are not allowed to have any type of smartphone in school, and the schools do not have access to tablets which is a problem because that is how the app will run. Moving forward we will need to figure out a partnership between local schools and UGA to provide the necessary technology so that our app can be beneficial.

In addition to contacting local educators, we also created a survey and sent it out to students at UGA. Our goal of this survey was to better understand what people know about a watershed, Lake Herrick, their concerns regarding sustainability, and features they would like to see in an application. Results from this survey are below:

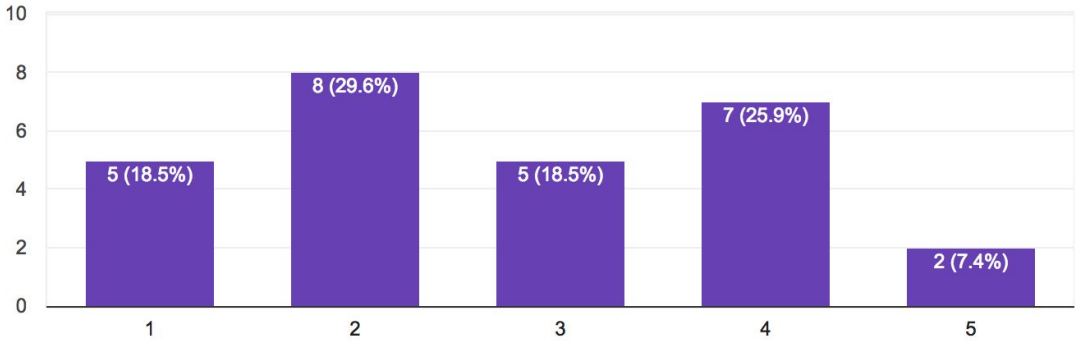
### How often do you recycle?

27 responses



How interested are you in learning about the conditions of our watershed in Athens on a scale of 1-5? (1 being completely uninterested and 5 being very interested?)

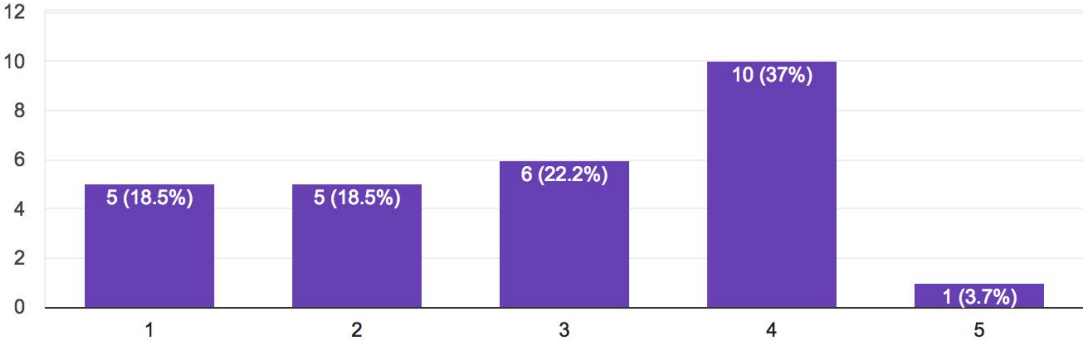
27 responses



How interested are you in learning about the Lake Herrick restoration project on a scale of 1-5? (1 being completely uninterested and 5 being very interested?)

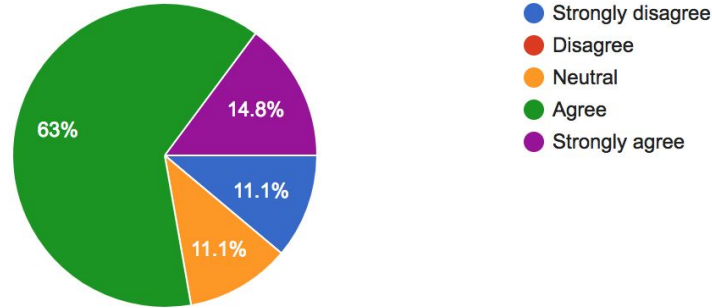


27 responses



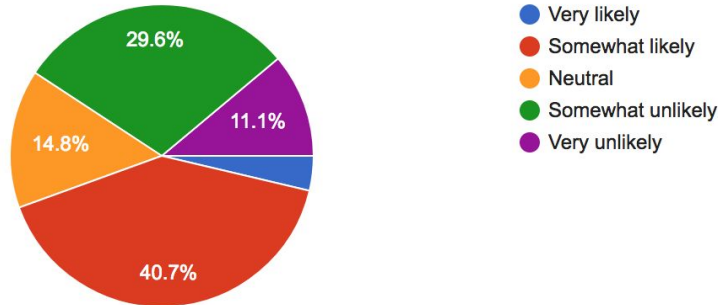
## Sustainability is important to me:

27 responses



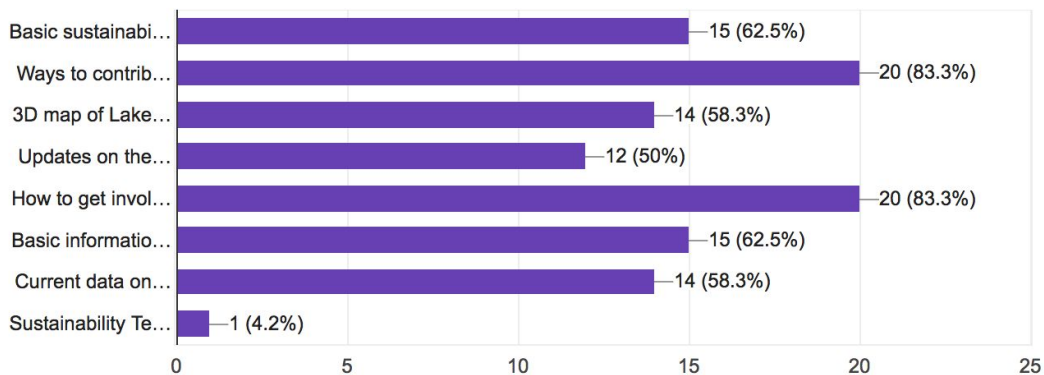
## If there was a smart phone app to learn about sustainability in Athens, how likely would you be to download it?

27 responses



## Imagine that there was a smart phone app about sustainability in the Athens area. What features would you like to see for this app? (check all that apply)

24 responses



These surveys showed our team that the users of our App would most likely be students and teachers involved with environmental studies ages 12 and up. Due to the fact that cell phones are not allowed in most public school classrooms and public schools don't have the funds to pay for iPads, we settled on aiming the current design of our app toward private school and college campuses that can afford the technology.

We created three user profiles to assess who our ideal target audience would be as well as why and how they would use our app:



Jared  
High School Junior

Jared is an environmentally conscious high school student and an outdoor enthusiast living in Athens. He's been looking for a way to give back to his community and add some experience to his college applications. He asks his high school science teacher about any projects or volunteer opportunities going on around town. She points him to the Lake Herrick Project App that he can download onto his phone to keep him updated on project details, timelines, and updates associated with the Lake. He is pleasantly surprised to find that the Lake is scheduled to open in the Summer of

2018 and will include many new outdoor activities and attractions. He contacts the head of the project to see if there is anything he can do to help the project along and spread the word about the progress.



Mr. Arnold  
UGA Ecology 101 Professor

Mr. Arnold's lectures aren't hitting home with his freshman students. They are bored and uninterested in learning about water quality and water pollution. Mr. Arnold wants to find a way to engage his students and offer an example of pollution in an area that is relevant to them. He is already familiar with the watershed and water quality issues in Athens, so he reaches out to Watershed UGA, an organization dedicated to bettering the watersheds in Athens. The Watershed UGA team informs him that a team of New Media students created an app for Watershed UGA

that includes engaging features such as 3D mapping and augmented reality. He downloads the app to check out these features. He really enjoys the content and decides to create assignments for his classes based on these features.



Lucy

UGA Masters Student in Conservations Ecology and Sustainable Development

Lucy was granted the John Spencer Fellowship for her interest in freshwater conservation and management. The assistantship funds two years of research which she decided to devote to the streams in Athens, Georgia. Her focus in on the water quality, pollution, and reconstruction of Lake Herrick. She wants to contribute to the ongoing research associated with the lake and discover ways to keep the Lake from becoming polluted and unnavigable again. She takes to the internet to find basic knowledge of the research going on with the lake and goes to the

Lake Herrick Project website first. On this page, she finds the link to download the Watershed UGA app which features information, 3D mapping, and augmented reality associated with the lake. She downloads the app to check it out and decides it's a better idea to have the Watershed UGA app and it's features than to use her phone's internet browser when she's out in the field collecting research. She decides that she also wants to contribute to the data on the app and wants to be able to update it with her research, so she contacts the Watershed UGA team to find out how.

Research showed that our users will come to our app with a specific task in mind and not just for fun. As we approached our design, we took this into account and created a beta UX map that was both simple, straightforward, and easy-to-use. Our buttons and pathways are clearly defined, and our photos are high quality giving our app a clean look.

Going forward, we hope to collect more responses from teachers and professors of public schools and colleges in order to get a better sense of how our users would use the app. We currently have two major educational influencers we are planning to contact about our app design and classroom usage.

We plan to test out various AR applications with students to observe their interactions and behaviors regarding their design and functionality. Hopefully, we will gain invaluable knowledge through this research and better design an app suited to our audience. We will then be testing our own application in various forms on students and professors to gauge our success.