USER TESTING SESSION 1 SUMMARY

The first user testing session provided a questionnaire with 3 multi-part questions, each concerning a specific aspect of the user application. Participants filled out a version of the questionnaire on Google Forms after being presented the videos. Personal details collected from the participants were their age and work status.

The following sections are correspondingly labelled to the questions in the questionnaire created for the interviews.

THE USERS

A total of 6 people participated in the study. The overall age range of the participants was 18-23, the majority of whom were students in full time higher education. 1 participant self-reported as a Royal Marine (non-student).

RESPONSES TO THE USER INTERFACE

* 1. EASE OF TRANSITION

Out of 10, the ease of transition within the application was rated a mean average of 8.67/10, indicating that the version of the application shown to the users was universally easy to use.

* 1. DESIGN CLARITY

1. Out of 10, the clarity of the application’s design was rated a mean average of 7.33/10, indicating that the design of the version of the application shown to the users was generally clear enough to the participants. The lowest rating by one user of the application’s design clarity was 4/10, which indicates that there may still be some consideration to be made regarding the future design clarity of the application.
2. All 6 users responded that it was clear how to interact with the application. All users understood and recognised that the interface buttons were buttons.
   1. THE APPEAL OF THE APPLICATION

The general response by participants to the question of whether users between the target age range of 10-20 years old would be enticed by the application was that they thought it would be unlikely that others would be interested in using it – reasons why include the interface not being engaging enough, the general premise of the application not being targeted for younger users, and the lack of general applicability of the application to everyday life.

* 1. TEXT FORMATTING

All users agreed that the text formatting and readability of the application was sufficient, although for improvement a few suggested that the screen text where applicable should be larger.

* 1. MOST DIFFICULT PART TO USE

There was a varied response to the difficulty of use of the user interface, 2 of the users who responded to this question found no difficulty with any part of the app, 1 user found the settings page to be the most difficult to interact with, and the final 2 respondents struggled the most with the camera use.

* 1. FURTHER COMMENTS

4 of 6 users had further suggestions with regards to development of future versions of the application. 2 users suggested that a clearer home page should be developed, and bigger font sizes on the information pages. The other 2 suggested a help section, which gives a tutorial on how to use the application – with the tutorial specifically giving example demonstrations to users – which according to these participants would be helpful for younger users under the age of 16.

RESPONSES TO THE PREMISE AND THEME OF THE APPLICATION

2.1. PRIOR MATHEMATICAL BACKGROUND OF USERS

1 of 6 participants did not have the relevant understanding of linear graph theory for using the application; 1 of 6 reported GCSE level background knowledge; 1 of 6 had studied mathematics up to AS Level; 2 of 6 had an A Level knowledge of mathematics; 1 of 6 had studied mathematics at university level prior to using the app.

2.2. PRIOR KNOWLEDGE OF VORONOI TESSELLATIONS OF USERS

All participants who responded to this question had no previous knowledge of Voronoi Tessellations.

2.3. KNOWLEDGE GAINED FROM USING THE APPLICATION

All users reported an increased understanding of Voronoi Tessellations after being shown how the application works.

2.4. SUFFICIENCY OF INFORMATION ON THE APPLICATION

The majority of participants found there to be enough information on the application to learn about the topic presented. 5 of 6 users thought that there was enough information to gain a basic introductory understanding of Voronoi Tessellations, while the final 1 of 6 did not think there was enough information for them to understand the mathematics to a sufficient level.

2.5. INCREASED INTEREST IN THE UNIVERSITY’S EXHIBIT

3 of 6 users (50%) said they were more interested in the University’s Fry Building’s Voronoi sculpture after their interaction with the application; 1 of 6 reported a possible increase in interest, while the final 2 of 6 did not find that the application increased their interest.

FURTHER USER COMMENTS (Question 4 in original questionnaire/Question 3 in version used)

3.1. SUGGESTIONS FOR THE USER INTERFACE

Participants suggested that the application’s user interface needed to be more ‘captivating’ as well as have a more ‘modern’ look. Other comments pointed out that text in the information section of the application needed to be enlarged, and that labels of interactive components throughout the app needed to be clearer. One participant stated that the menu screen was not big enough.

3.2. SUGGESTIONS FOR THE AUGMENTED REALITY / CAMERA COMPONENT

One comment suggested that the AR interface was ‘clunky’ and did not run smoothly enough during use. Another comment suggested that the camera needed a ‘greater range’, and another suggested that a ‘keypad of sorts’ could be added, as well as a ‘drag-and-pinch’ functionality presumably for changing the camera’s level of zoom.

3.3. RECOMMENDABILITY OF THE APPLICATION

3 of the users who responded to this question said they would recommend the application to a friend. 1 user said that they were not interested in the subject presented by the application. 1 respondent said they would recommend the app only to friends already interested in mathematics.