

## **Teaching Art Creation with Augmented Reality**

Carina George, Anca Doloc-Mihu, Cindy Robertson  
Georgia Gwinnett College  
USA  
cgeorge4@ggc.edu, adolocmihu@ggc.edu, crobertson2@ggc.edu

**Abstract:** Our project aims to provide a snapshot of the possibilities of Augmented Reality (AR) art creation within a limited timeframe. It offers participants a way to express their creativity. We introduce college students to the world of AR via several workshops. Here we present the results of these workshops. Our audience understood how to create 3D models and how to use them in an augmented reality environment. Participants also found our workshop fun and engaging and that it expanded their interest in these new technologies.

### **Keywords**

Augmented Reality, AR, Blender, Outreach, Information Technology, 3D modeling

### **INTRODUCTION**

In this work, I am presenting the project that I developed during my Technology Ambassador Program (TAP) course at Georgia Gwinnett College(GGC). This project aims to introduce diverse audiences to Augmented Reality (AR) art creation, letting them discover how fun and creative the field is, and ultimately attract them to Information Technology (IT) and STEM fields.

### **THE TECHNOLOGY AMBASSADORS PROGRAM (TAP)**

The Technology Ambassadors Program (TAP) has a focused commitment to service learning. Addressing the need to increase the number of students who persist in Information Technology (IT), particularly those underrepresented in computing. The program provides enhanced technical, communication, and leadership skills, via technical, fun, and engaging projects, aimed at attracting audiences to IT (Dekhane et al. 2018; Robertson and Doloc-Mihu 2021).

## PROJECT: ART CREATION WITH AR

Our project leads students on a transformative journey into the world of art creation by integrating Augmented Reality (AR) and 3D digital art. For the AR, we used Adobe Aero (Adobe Aero 2025), and for the 3D modeling, we used Blender (Blender 2025). The project includes an introduction to the application software and its contributions to augmented reality artworks, along with an introduction to Augmented Reality (AR). Then, students will learn step-by-step how to craft interactive three-dimensional art pieces that showcase their creativity using Blender (Blender 2025), while understanding the functionalities within the Aero application.

Figure 1 shows an example of a 3D object created in Blender (Snowman) that we then imported and used in the Adobe Aero augmented reality environment.

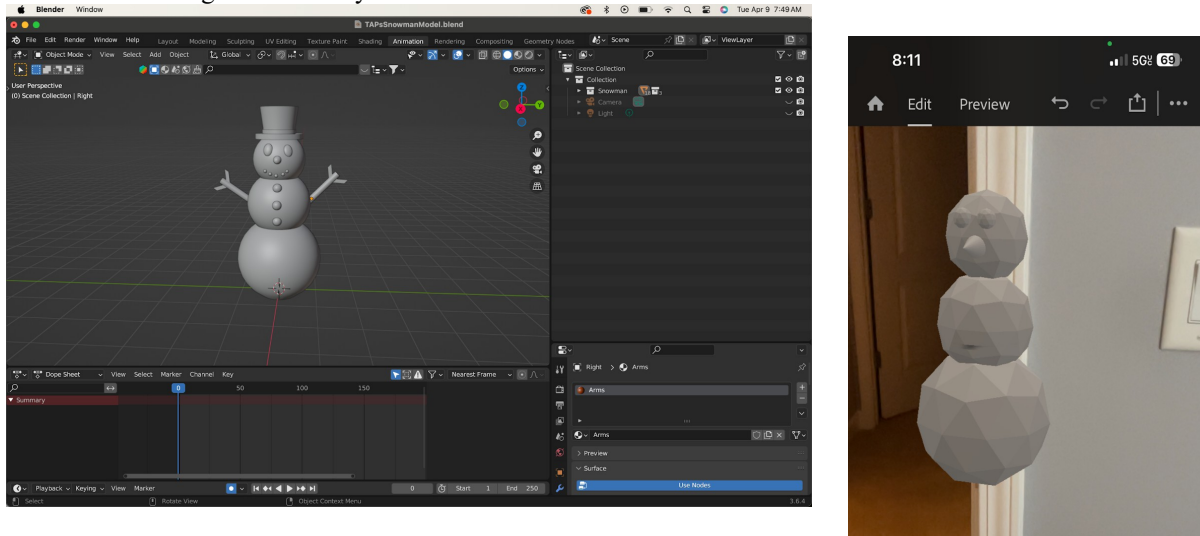


Figure 1: Image of a 3D snowman (left) that was created in Blender and displayed as an Augmented Reality object in Adobe Aero (right).

## RESULTS FROM OUR OUTREACH WORKSHOPS

We hosted three different workshops in general education classrooms at our college. The workshops were one hour long and consisted of a pre-survey, a demonstration of the capabilities of Augmented Reality (AR), and a lesson on understanding how to create your own 3D art using Blender. Then we let the participants experiment with these tools by creating their own art pieces. We finished each workshop with a post-survey. Our team created an adept library using Blender for the students to engage with and create their unique three-dimensional pieces.

Our audiences took pre and post-surveys at the beginning and at the end of our workshops. We had a total of 20 participants who took both the pre and post-survey. We disregarded all our other participants' answers because they did not do either pre or post-survey. In the following, we report the results only from those 20 participants who took both pre-survey and post-survey.

## DEMOGRAPHICS

Demographic

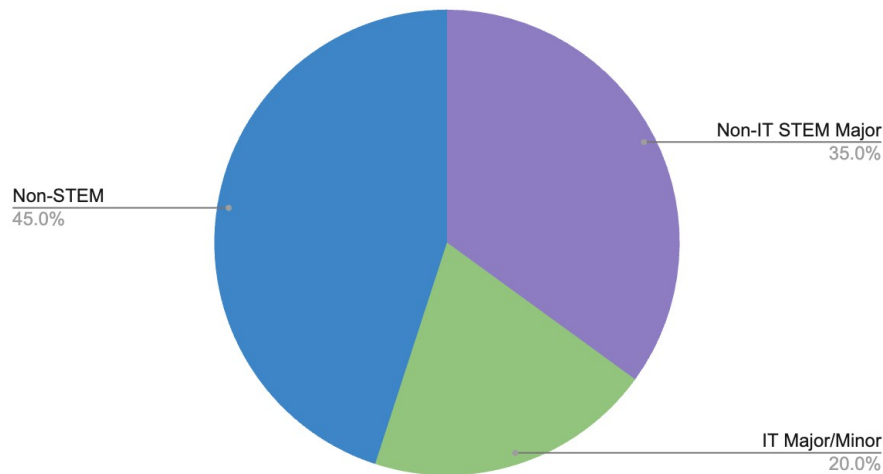


Figure 2: Summary of majors for our workshop audience, split into IT, non-IT STEM, and non-STEM categories.

Figure 2 shows that we had a lot of participants who were not IT that were in our workshops, 45% (or 9) non-STEM and 35% (or 7) not-IT STEM majors.

Gender

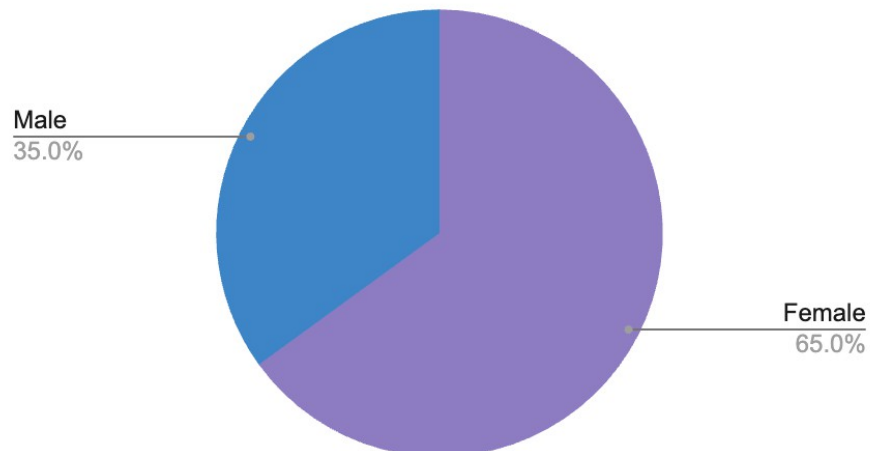


Figure 3: Summary of our workshop audience based on gender

Figure 3 shows that the majority of our participants were females, with that being 13 while 7 of the participants were male.

## RESULTS FOR GENERAL CONCEPT QUESTIONS

We asked our audience several general concept questions and we provide below their answers to those questions.

### How interested are you in AR?

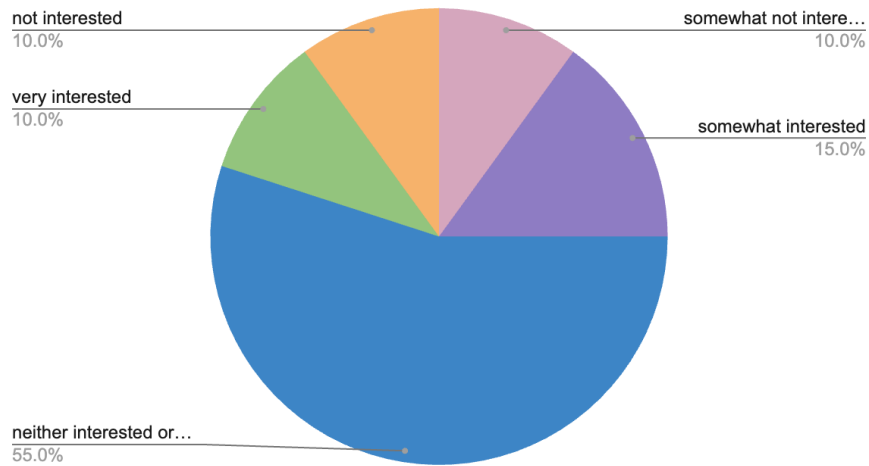


Figure 4: Results for the “How interested are you in building 3D models?” question.

Figure 4 shows the interest of our audience in building 3D models. We can see that the majority (35%) of our participants are neither interested nor disinterested, 20% are somewhat interested, and another 20% are very interested. Also, 15% are somewhat not interested and 10% are not interested at all. In other words, there was a wide variety of opinions regarding 3D modeling.

### How interested are you in AR?

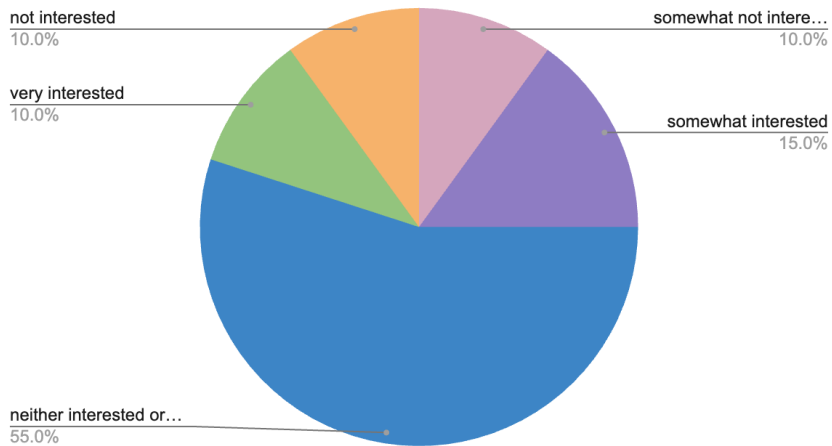


Figure 5: Results for the “How interested are you in Augmented Reality?” question

Figure 5 shows how interested our audience was in Augmented Reality. Here, we see that the majority (55%) of our participants were neither interested nor disinterested. Then, we had 15% of participants who were somewhat interested. The rest of the three categories, corresponding to participants who were not interested, very interested, and somewhat not interested, each had 10%. This shows that even though the majority did not have a strong opinion on Augmented Reality there was an even split for those who were somewhat interested, then not interested, very interested, and somewhat not interested.



Figure 6: Results for the “Do You Believe That You Can Create 3D Models?” question.

Figure 6 displays the results for the pre and post-survey question: “Do You Believe That You Can Create 3D Models?”. The surveys show that there was a sharp increase in participants' confidence in being able to create 3D models with only 10% showing confidence in the pre-survey to 65% confidence in the post-survey. The need for help also decreased with 65% saying they would indeed need help with creating 3D models in the pre-survey dropping to 35% in the post-survey. The “no” response had 25% in the pre-survey dropping to no one believing that they were not capable of creating 3D models.

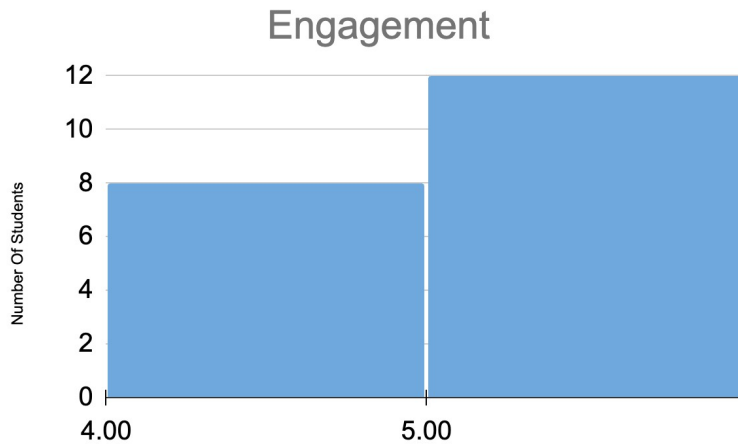


Figure 7: Results for the “How engaging was this workshop” question.

Figure 7 shows how engaging the workshops were on a scale from 0 to 5, with 0 being the lowest score that can be given and 5 being the highest score that can be given. The figure shows that participants were quite engaged as they gave an overall score of 9.2 on a 1 to 10 scale.

## DISCUSSION

In our pre-survey, we asked participants whether they liked learning new technologies and whether they liked using new technologies (data not shown). 32% of participants expressed interest in learning and using new technologies, with 26% in Augmented Reality (AR) and 41% in 3D modeling. The results shown in Figures 4 and 5 indicate that the majority of workshop participants have a neutral answer in their interest in building 3D models and using augmented reality. Figure 6 shows a significant increase in confidence between the pre and post-surveys (more than 55%) which shows us that the audience understood what 3D modeling is and how to create it. Participants benefited from our workshops’ hands-on learning experiences, with 60% indicating they found the workshops enjoyable, while 64% reported finding them engaging. Students rated the average difficulty of the

material as 4.8 out of 10. Students rated their workshop experience positively, suggesting that they found the workshops engaging, enjoyable, and beneficial giving it an overall score of 9.2 out of 10.

In addition to these workshops, we have presented our project at several events involving K-12 participants. Over 100 students engaged actively with our AR demonstrations, showing a keen interest in exploring immersive experiences.

We understand that our dataset is relatively small in this study, so we cannot draw definite conclusions. However, the results presented here show us that we developed an engaging project that helped the audience gain interest in these new technologies.

## **CONCLUSION**

These trends collectively highlight a strong interest in technology-related topics, coupled with a need for support and guidance in acquiring new skills and knowledge in areas such as AR and 3D modeling. They also demonstrate the importance of providing engaging and effective workshop experiences that meet the needs and expectations of participants. We conclude that we need to host more workshops to collect more results from the audiences such that we can provide more accurate insights.

## **ACKNOWLEDGMENTS**

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