Teaching Sound Editing with Audacity and Makey Makey

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ABSTRACT

The goal of this study is to introduce sound editing and use the novelty of Makey Makey to increase interest in Information Technology. Using stories as a requirement for certain abstract sound effects, we show the importance of being able to edit recorded audio to produce sounds. Our workshop uses open-source applications that do not require prior knowledge of IT related concepts to ensure that our audience can follow along cohesively and explore the concepts taught on their own. Through this workshop, we have shown that outreach activities, such as ours, can spark an interest in STEM and IT.

CCS CONCEPTS

• **Applied computing → Interactive learning environments**.

KEYWORDS

Sound editing, Makey Makey, Scratch, Audacity, Outreach, Information Technology

ACM Reference Format:
Kevin Rubio, Samuel Downs, Jasmine Roach, Ammar Mehicevic, Anca Doloc-Mihu, and Cindy Robertson. 2024. Teaching Sound Editing with Audacity and Makey Makey. In *2024 ACM Southeast Conference (ACMSE 2024), April 18–20, 2024, Marietta, GA, USA.* ACM, New York, NY, USA, 2 pages. https://doi.org/10.1145/3603287.3656161

1 INTRODUCTION

The goal of this study is to introduce students to recording and editing sound files through a fun and interactive horror story Mad Lib activity. We developed this project as part of the Technology Ambassador Program (TAP) at Georgia Gwinnett College. The TAP program is a program for anyone with an interest in Information Technology. The program lets students learn more about different technologies while creating outreach workshops to promote an interest in STEM in their community. The creation and implementation of these workshops will allow TAP students to develop better communication and leadership skills while also letting students be creative in designing their projects. The TAP program promotes the acquisition of research skills and encourages students to attend conferences to present their projects. We conducted this study to engage and teach students the basics of audio editing with the intent of showing our participants that STEM and IT-related activities are fun and not intimidating.

ACMSE 2024, April 18–20, 2024, Marietta, GA, USA

ACM ISBN 979-8-4007-0237-2/24/04.
https://doi.org/10.1145/3603287.3656161

2 METHODOLOGY

Our goal is to teach recording and sound editing through a fun and interactive horror story Mad Lib activity.

2.1 Technology

Our project, inspired by [2, 5], includes narrative stories that feature sound effects created in Audacity [1] and activated by the reader pushing a button to produce a given sound effect. These buttons were created using an interactive controller, Makey Makey [3], to accept input into a program we created in Scratch [4], a block coding website, to allow participants to produce sounds.

2.2 Outreach Events

This study looks at two types of outreach events: Demonstrations and Classroom Workshops.

During our demonstrations, our team provided stories and pre-recorded sounds. We showed our participants how to use a Makey Makey to play those sounds while following along to a horror story. As the story was being told, we explained how each sound was recorded and edited by our team.

Our classroom workshops included an overview of the TAP program, a pre-survey, and an introduction on how to use a Makey Makey. We then taught them how to edit and export sounds through Audacity and gave them time to create their own sounds which they uploaded to Scratch. Finally, we administered a post-survey about the skills learned in the workshop to gauge their interest in the activity. Figure 1 shows two of our participants heavily engaged in our workshop.

3 RESULTS

We analyzed our pre and post-survey data and our preliminary analysis shows some positive results:

(1) Many students had little to no experience with using Makey Makey and Audacity.

Figure 1: Excited Workshop Participants

(2) Most of the students found using a Makey Makey and Audacity to be entertaining. 73.7% (out of 19) gave our workshop a 5/5 in terms of engaging, while the rest gave it a 4/5.
(3) 100% of our participants gave our workshop the highest rating of 5 on our team's ability to keep the class engaged and focused.
(4) Most (17 out of 19) of our participants are somewhat interested in programming/game development.
(5) All but 2 students found our workshop to be relatively easy, giving the difficulty less than a 5 out of 10.

Not all of our results were positive. A few of our participants found the set-up part of the workshop confusing. We plan to improve the set-up process in the future by having everything set up and downloaded prior to our workshops.

ACKNOWLEDGMENTS

We would like to thank the School of Science and Technology at Georgia Gwinnett College for their continued support of the TAP program and the STARS Computing Corps. Sponsored via NSF 2315804.

REFERENCES

[1] Audacity. [n. d.]. *Audacity.* https://www.audacityteam.org/
[2] Erik Brunvand and Nina McCurdy. 2017. Making Noise: Using Sound-Art to Explore Technological Fluency. *ACM Inroads* 8, 2 (2017), 60–65. https://doi.org/10.1145/3095781.3017714
[3] Makey Makey. [n. d.]. *Makey Makey.* https://makeymakey.com/
[4] MIT. [n. d.]. *Scratch.* https://scratch.mit.edu/
[5] Alex Smyntyna, Khadijah Nixon, James Broome, Hieu Dinh, Anca Doloc-Mihu, and Cindy Robertson. 2019. Using Technology to Create Synthetic Instruments and Engage Students While Teaching Algorithmic Skills. In *Proceedings of CCSC:SE.* Auburn, AL, USA.