

Sound Design as an accessibility tool in video games

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**Abstract**

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Keywords: Sound, design, accessibility, visually impaired,

Purpose:

Project: We are using a mixed-methods approach for research, combining both quantitative and qualitative research methods. This helps provide a more complete understanding of how sound design can improve video game accessibility for visually impaired players. The quantitative part involves a survey to collect general information about visually impaired players’ experiences with sound in games. The qualitative part includes playtesting and interviews, where participants test a game prototype. In addition, we are build a prototype

1. Introduction

Video games are growing and with that, the demand for them to be accessible is growing as well. /\*There is an emerging need for games to be accessible to different people with different needs and capabilities.\*/ Inclusion of people with disabilities is always positive and one area which is often overlooked and could be discussed more is sound design. Sound design could help retain players with visual impairments who would otherwise have to rely solely on visuals to help them or would stop playing all together. Sound design as a tool is not just about music and sound effects, it's so much more. It is about carefully considering the player's needs and then tailoring to them so the player can be helped in understanding the game mechanics and other elements of the game in an immersive way.

Most of the time, the difficulties faced by visually impaired players tend to be solved through visual techniques. This includes color palettes, contrasts, and adding more visual elements. Often, this is not enough, and with the addition of too many visual elements, the content can become overwhelming. Through this project, we are not trying to replace visual elements with sound elements and sound design, but we want to find ways to incorporate them and have them work in tandem.

4. Description

This section details how we used the sound as a design and accessibility, as well as a brief description of the FPS MOOD prototype we developed in Unity to test these implementations. Before integrating our sound design, we decided a survey would be a great way to identify common problems visually impaired people face when gaming and make note of their suggestions on how audio cues could potentially better their gameplay experience.

After analyzing the gathered results from the survey and reading existing research on audio-based accessibility in other games, we implemented sound effects which were designed in a way to help visually impaired players play the game more easily. We also implemented regular sounds where we thought those were needed instead of specially crafted sounds tailored for the visually impaired. These features were put into the MOOD prototype and tested by participants from the original survey. We conducted a follow-up survey after playtesting to determine how effective this type of audio design was in improving their experience and to what degree it impacted the player’s ability to play the game. With this approach we aim to explore how sound can be effectively used to create a better gaming experience for everyone.

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| The sound used | The role of the sound | Where in the game is the sound used | How is the sound used |
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