# Project topic: Creating meaningful music experiences for diverse abilities and age groups.

## **Background**

This project involves developing a music application to enable people with diverse needs and abilities to create and/or listen to music to help with mood regulation. The project takes its inspiration from the Skoog device, a cubed object that has been designed to provide accessible music experiences for children with autism. Ideally, you will develop an application for use with the Skoog device but if this is not possible, you will create a simple music application that could be used on a smart phone or tablet, or with a smart speaker.

Existing music *listening* applications, such as Spotify and YouTube music can be difficult for some people to use due to the crowded interface and confusion caused by the recommender systems that attempt to direct the user’s choices. In addition, applications for *creating* music are not usually designed to be accessible for people with different abilities and needs.

The Skoog device provides an accessible tangible interface, that allows users to create music by pressing a large button embedded in the cube. It “has been designed to be inclusive and accessible – especially to those unable to play conventional musical instrument.” (<https://en.wikipedia.org/wiki/Skoog>).

Similarly, in the context of dementia care, researchers have developed a “‘pillow-like’ sound player”, which is operated through physical movement (Houben et al., 2020). This device allows people to play “everyday sounds” rather than music and is designed to stimulate conversation through playful interactions.

## **Your task**

Choose a user group you would like to design a music or sound application for. You should focus on designing an application that could be used by one of the following groups:

* Pre-school aged children (i.e., aged 3 to 5)
* Children with autism
* Young adults with autism or intellectual disabilities
* Older adults with dementia
* Another user group (you can choose)

Conduct some desk research to learn more about this group and their needs.

Develop an application that can be used to create or listen to music (or both) and that has a highly simplified interface so it can be used by people with accessibility needs.

Although the focus here is on music, you can also consider creating an application that plays sounds – such as the sound of birds singing, rain, café noises, etc (like the pillow interface mentioned above). This could be a playful way for people to create their own soundtracks or to choose sounds to listen to when they want to change their mood (e.g., to feel calm or uplifted).

## **Resources**

<https://skoogmusic.com/>

<https://remix.berklee.edu/able-videos/2/>

## **References and further reading**

Houben et al. (2020). The role of everyday sounds in advanced dementia care. *CHI ’20: Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems.* <https://dl.acm.org/doi/10.1145/3313831.3376577>

Ilsar et al (2022). Inclusive Improvisation: Exploring the line between listening and playing music. *ACM Transactions on Accessible Computing, 15*(2). <https://dl.acm.org/doi/10.1145/3506856>

Tiija, R. (2019). A case study on the use of an innovative, technical, musical instrument, Skoog, in a special needs education setting with a child with autism and its effects on social skills. *Journal of Mujsic, Technology & Education, 12*(2), p. 179-200.