



**INFORMATICS
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INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

**IMPROVE LEARNING AND COGNITIVE ABILITIES USING
VIRTUAL MUSIC THERAPY FOR DOWN SYNDROME
CHILDREN**

A Project Thesis by

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ABSTRACT

Children with Down syndrome are born with unique abilities and needs. In Sri Lanka, these children are often neglected by society, and they receive very little attention. Harmonizing technology-assisted learning has the potential to improve the learning and cognitive skills of children with Down syndrome compared to traditional learning methods . This study presents an interactive learning platform that incorporates music therapy to enhance the learning and cognitive abilities of children with Down syndrome. Music helps these children to perform repetitive tasks and tackle challenging problems. The study includes Sinhala language learning lessons and Sinhala letter recognition activities. The platform is highly interactive with the children and can detect their emotions. Based on the facial emotions, the platform suggests music to keep them engaged. The study was performed under medical supervision and testing the prototype with the children produced promising results.