



UNIVERSITI TEKNOLOGI MARA

**SIMPLE TOUCH SENSOR BASED GAME AS
AMBIENT ASSISTIVE DEVICE FOR MILD
AUTISM SPECTRUM DISORDER CHILDREN**

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ABSTRACT

This paper will be showing the development of a system that will act as an ambient system for children diagnosed with autism spectrum disorder (ASD). This system will be in a form of an interactive game using touch sensor as the main component. A research was done to develop the best possible game that could help maximize the impact of this system to help said children to develop necessary skills needed to change the trajectory of their brain to be more similar to children with normal brain development. The research done was based on Early Intervention Programme, a module usually used to help young children reduce symptoms of their condition. In particular, the game was designed by taking consideration important skills that is helpful in the early intervention program. This study focuses on early start Denver model that provides useful information on the development of skills for children with ASD during therapy. The proposed system will implement some of the physical therapy done by the therapist but in the form of an interactive game.

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CHAPTER 1

INTRODUCTION

1.1 MOTIVATION AND BACKGROUND

This project's main aim is to develop a system that will be able to help children with Autism Spectrum Disorder (ASD) by designing an interactive game that may be able to act as an ambient assistive device for these kids. By the end of this project, this project can hopefully be of help for not only the children themselves, but also the parents and therapists.

ASD is a neurological disorder that may affect the ability of people diagnosed with it to communicate and interact socially with others. [1] This is a type of development difficulty that affects the way someone relate, communicate and interact with everyone. Their perspectives or the way they see the world around them may also differ from other children with normal development, they may also sometimes seem to be as if they are "in their own world". In essence, children with ASD may have restricted ability to communicate and they usually have restricted, repetitive patterns of behaviour or interests.

As the term spectrum already means "wide range", ASD is a condition that affects everyone differently, meaning that not everyone will have the same symptoms. They