UNIVERSITI TEKNOLOGI MARA

DESIGN FRAMEWORK OF THE PHYSICAL LEARNING ENVIRONMENT FOR CHILDREN WITH AUTISM

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ABSTRACT

Autism Spectrum Disorder (ASD) refers to a range of conditions characterised by challenges with social skills, repetitive behaviours, nonverbal communication, unique strengths, and differences. Children with autism may appear to behave unusual when they are in a difficult situation. The impact of sensory differences in people with autism has been recognised recently. They are unique and have a combination of characteristics; therefore, a designated learning environment should consider the sensory issues to overcome their needs. Several studies have shown that the quality learning environment has become significant, which affects learning outcomes. Previous studies by many researchers did not concerning the autistic environment. Issues were highlighted and only focused on sensory sensitivity, sensory stimulation, sensory design towards the physical learning environment. However, none of them is looking at the research concurrently and developing a framework. Therefore, this research will explore and develop a framework for sensory sensitivity, stimulation, and sensory design towards the physical learning environment to fill the study gap. This research investigation employed a quantitative approach by using a survey method to identify the factor of sensory sensitivity, sensory stimulation, sensory design, and physical learning environment. In addition, this study will also determine the respondents' awareness of knowledge and explore the relationship among those four variables. The respondents (n=384) were people involved in the autism learning environment; they were encouraged to give opinions and may or may not experience designing or creating the autism learning environment. The questionnaires asked the respondents about their awareness of knowledge regarding the autism environment. Partial Least Square Structural Equation Modelling (PLS-SEM) conducted to develop a framework of sensory sensitivity, sensory stimulation, sensory design toward the physical learning environment. The findings demonstrated sensory stimulation and sensory design has significant relationships and support the physical learning environment. The analysis has proven that sensory stimulation such as smell, lighting, visual and colour helps the children with autism dealing with unusual responses that stimulate them in the environment. Meanwhile, sensory design with safety and spatial sequencing are the most important to create a conducive environment for children with autism. Therefore, the dimension of sensory stimulation and sensory design was most relevant to the physical learning environment. This research would be beneficial and considered in improving the existing environment or creating a new learning environment that optimises the classroom ambient, and upon parent's and staff's satisfaction within the Malaysian context.

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CHAPTER ONE
INTRODUCTION

1.1 Introduction

This chapter briefly explains the study background, which provides the main idea and general overview regarding this research. Meanwhile, the problem statement describes the concerning issues and the relevant gap of this study. Next, followed by research aim, research questions, objectives, research framework, the study's significance, scope, study expectation, and finally, the definition of terms.

1.2 Research Background

Autism Spectrum Disorder (ASD) is a broad term for a group of complex, neuro-developmental disabilities or cluster of neuro-developmental disorders that impairs verbal and non-verbal communication and social interaction (Chiam, 2016; Altenmüller-Lewis, 2017). Children with autism also challenges their sensory processing and integration problems, which negatively impact their engagement in daily activities (Matin et al., 2017). The neuro-developmental disorders exist across all social and economic, occur in every racial, ethnic group, and give a life-long impact to their affected relative (Samadi and McConkey, 2011; Altenmüller-Lewis, 2017).

Around the world, most nations have many ASD cases among their population. According to a report by U.S. Centers for Disease Control and Prevention's Autism and Developmental Disabilities Monitoring (ADDM) Network, in 1990, children with ASD had been identified with about 1 in 150 children. In 2012, they were about 1 in 68 had been identified, and 2014 study, the statistic has increased 1 in 59 children aged eight were detected (Needs et al., 2018).

There are a growing number of existing studies in the broader literature, done by Beaver (2011), Mcnally, Morris, and Mcallister (2013), Nagib and Williams (2016), Altenmüller-Lewis (2017) and other researchers undertaken in Western countries. Researchers from the Asian countries reviewed any form of special needs that are less developed for ASD, such as Noiprawat and Sahachaiseri (2010), Noiprawat and