

UNIVERSITI TEKNOLOGI MARA

**CHILD–ENVIRONMENT
BEHAVIOR SETTINGS EMERGE
FROM SPATIAL AFFORDANCES IN
CHINESE KINDERGARTEN
CLASSROOMS**

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ABSTRACT

Children's play in classroom environments is fundamental to cognitive, social, and emotional development. However, prevailing design practices in Chinese kindergartens are often standardized and curriculum-driven, resulting in homogeneous spatial arrangements that constrain children's self-initiated play, peer interaction, and environmental exploration. Addressing this gap, this study investigates how kindergarten classroom environments mediate children's free-play behaviors and social participation through both physical properties (spatial components, layout, functional surfaces) and environmental attributes (adjacency, operability, legibility, and openness). Drawing on ecological psychology (affordances) and environmental psychology (behavior settings), the study investigates three age groups (3–6 years) in a public kindergarten in Nanchang, China. A mixed-methods design was employed with 69 children, combining systematic video-based observation (786 minutes), behavioral coding, grid-based behavior mapping, field notes, spatial analysis, and informal on-the-spot child interviews (N = 18). Play behaviors were coded using an adapted POS framework, and social participation was classified following Parten-based developmental categories. Quantitative descriptive analysis was integrated with qualitative content and thematic analysis to triangulate behavioral, spatial, and perceptual data. Findings reveal clear developmental differences in how children actualize spatial affordances. Younger children (3–4 years) relied heavily on enclosed, legible, and material-rich areas that supported sensorimotor and socio-dramatic play, emphasizing emotional security and parallel participation. In contrast, older children (4–6 years) increasingly engaged in constructive, rule-based, and group play within open yet functionally bounded settings, demonstrating advanced negotiation, collaboration, and symbolic reasoning. Across age groups, children actively co-created transient micro-behavior settings, highlighting classrooms as negotiated ecosystems shaped by dynamic child–peer–environment transactions rather than fixed instructional spaces. Theoretically, this study advances an integrated ecological–environmental psychology framework by developing a child-centered behavior–environment matrix and a model of ephemeral behavior-setting dynamics, reconceptualizing kindergarten classrooms as evolving systems of affordance actualization. These findings support age-responsive, non-homogenized design strategies that balance structure and flexibility. Future research should extend this framework through multi-site sampling and quasi-experimental designs to strengthen causal inference.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This study investigates the dynamic relationship between children and their educational environments in early childhood settings, with a specific focus on children's spontaneous behaviors during free play sessions. Adopting a child-centered perspective, the research aims to develop an ecological-behavioral framework that elucidates how spatial characteristics in Chinese kindergarten classrooms shape children's behavioral patterns. To achieve this goal, the present chapter outlines the study's overarching focus and is structured as follows:

- i) Research Background
- ii) Problem Statement
- iii) Research Gap
- iv) Research Aim and Research Objectives
- v) Research Questions
- vi) Research Methodology and Methods
- vii) Scope and Limitations of Study
- viii) Significance of Study
- ix) Thesis Structure

1.2 Research Background

Architecture fundamentally serves human needs and activities, creating an inseparable connection between buildings and their users (Mallory-Hill et al., 2012). This relationship is especially salient in learning environments, where spatial design continuously shapes and is shaped by users' behavioral patterns. Architects, designers, and ecological researchers recognize the profound influence of built settings on human behavior and social interaction (Hill, 2003; Lawson, 2007; McGlynn et al., 2013). Users' environmental perceptions further shape their future actions (Gifford, 2014; Rapoport, 1990), underscoring the importance of examining physical environmental factors from