

SYSTEMIZATION OF DESIGN GUIDELINES FOR INDOOR ENVIRONMENT OF CHILD-CARE CENTER

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Children develop in a direct relationship with their environments. In particular, their social environment, composed of parents, friends, and other adults and children, is an influential part of their development. Their physical environment, however, also has a significant influence on children's behavior and development (Moore, 1994). For young children, the home is the most central and important physical environment, but a child-care center is also significant, since children spend a considerable amount of time in this setting. A child-care center can be considered as a second residential space.

An increase in the number of working women has accelerated the diffusion of child-care facilities during the last several decades. There is, however, a need for a set of systematic design guidelines for the development of those centers and for the provision of quality care. The deliberate planning of such facilities is necessary to satisfy children's developmental needs, and to assist their caregivers. In other words, the environmental affordance (Gibson, 1979; Lee, 1997) should be carefully provided at the planning and design stage. In western countries, design guidelines that reflect the affordance concept have been actively recommended. In Korea, holistic and systematic examples are not easy to find, due to lack of information.

The purpose of this study was to present a set of systematic design guidelines to meet the behavioral needs of children and child-care caregivers and to examine the profiles and trends of the design guidelines. As an environmental affordance system, Murtha's (1976) user-benefit criteria were employed to analyze design guidelines in 11 selected examples.

Eleven books on child-care design were selected for content analysis. The criteria for selection were authors and research institutions, publishing agencies, publishing dates, and the number of citations by others. The appropriateness of the criteria and selected literature were examined by three experts in this area.

Murtha (1976) presented a set of user-benefit criteria applicable to the environmental design process. Since these criteria were presented as applicable to some or all scales of environmental design fields, with the appropriate adjustment for field characteristics and behavior, they have been found to be adequate for use as a reference framework for this study. A matrix of user-benefit criteria by specific spaces

was used as a framework for analyzing individual design guidelines.

First, according to the criteria, 11 foreign references were selected.

Second, the design guidelines in the literature were applied to the analysis units.

Third, the total initial item pool was completed according to criteria established by the three experts.

Fourth, each item was assigned a serial number and was then allocated into the appropriate matrix cells.

Fifth, after sorting, frequencies and percentages of the items were tabulated quantitatively into each matrix category.

The three raters initially independently assorted the items. Then, the raters compared and discussed their results, and arrived at a final agreement.

A total of 1,580 items from the selected literature was systematically presented according to specific spaces and Murtha's (1976) user-benefit criteria. Among the total 1,582 items, 955 items (60.4%) were categorized into Behavioral Facilitation, 332 items (21.0%) into Physiological Maintenance, 140 items (8.9%) into Perceptual Maintenance, and 153 items (9.7%) into Social Facilitation. The distribution by percentage was Behavioral Facilitation, Physiological Maintenance, Social Facilitation, and Perceptual Maintenance, in that order.

Among the total items, overall caring space or classroom (282, 17.9%), overall child care center (110, 7.1%), learning centers/activity pockets (107, 6.8%), children's toilet and bathrooms (91, 5.8%), infants' space (41, 2.6%), napping area (41, 2.6%), cubby area (38, 2.5%), diapering space (34, 2.2%), and pre-entry (25, 1.6%) were often mentioned. The numbers revealed the importance of spaces for physiological and other necessary activities such as learning centers/activity pockets, toilet and bathroom, napping area, cubby area, diapering area, and pre-entry, except for spaces categorized as overall environment.

The user-benefit profiles of specific spaces are as follows. In most spaces, including learning centers, Behavioral Facilitation was emphasized. In the case of toilet and bathroom, Physiological Maintenance was mentioned for scale and size of toilet and sink. Napping areas were also emphasized for climate and hazard concerns, while other spaces, like pre-entry spaces, were often applied to Perceptual Maintenance, because of their more subjective feeling.

In analyzing the design guidelines of western literature, the Behavioral Facilitation and Physiological Maintenance dimension were often mentioned. Because a child-care center is a place where many different behaviors of children take place, Behavioral

Facilitation should be considered the most important design guideline. The Physiological Maintenance dimension, which alleviates the vulnerability of children, should also be considered, to provide a safer and healthier environment.

The content analysis conducted in this study also empirically supports Murtha's (1976) user-benefit criteria and extends its theoretical power to the interior environment.

Future research needs to focus on additional literature for an expanded analysis. The guidelines suggested here are, however, comprehensive and applicable to child-care environments and should be helpful for both researchers and designers. Since child-care center designers will actively use these guidelines, and can apply them to actual projects, these guidelines are especially needed to meet the special behavioral needs of children by them.

References

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