

A Research on State-Transition Diagram for Interface Modeling Method

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Abstract

In interface design process, It is needed that an interface modeling method, which can be used to activate ideation, to visualize concepts, to communicate with other people, and to check interface design problems. The interface modeling method is a tool and media of design thinking. State-Transition Diagram, which was derived from object-oriented Modeling & Technique, is a method to describe the product's interaction in terms of change of status. This research aims at evaluation for possibility of State-Transition Diagram to adapt interface modeling method, and at discussion for characteristics of State-Transition Diagram. For these aims, State-Transition Diagram, which optimized in the product interface design, was introduced, circumstance of design field was surveyed, a case study that analysis and proposal design for restaurant serving system was observed, and reading test of State-Transition Diagram was conducted in this research. Through these studies, we were able to get a plenty of discussion for characteristics of State-Transition Diagram, and to verify possibility of decoding.

Keywords

State-Transition Diagram, Interface Modeling Method, object-oriented Modeling & Technique

Design Research on Tools for Children with Disabilities

Experimental Universal Design of Wooden Tools for Physical Walk Training

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A design method to achieve universal design for tools for children and the elderly with disabilities is not yet developed in Japan. The supply is not adequate when judged from function, psychological-physiological aspects, production-supply methods, and welfare policies that are based on the thought of universal design. In the therapy room, physical training apparatus are used for children, but many of them have a cheap and painful image. If the tools were made of wood, providing play elements and useable elements, they would be valuable tools with a warm image for all the people in the room. This research was to pursue a universal design method for tools for children with physical disabilities through the experimental design of wooden tool for physical walk training that the physically challenged children and their teachers could pleasurably use for training. The design process was as follows. First, five design concept items were assumed. Under the design concept, the design items for users and tools were extracted. From the design items, a trial product was designed. After experimental use, the tool was designed and produced again. Finally, a useable model was produced. It has wooden parallel handrails, frames and floor, and provides the play elements and useable elements. Many physically challenged children and their teachers use it pleasurably at a rehabilitation center in Sendai, Japan. The children and therapists try various active training regiments according to the physical and psychological development stage. It is getting usefulness. The atmosphere in the training rooms is changing to one of familiarity. The tool was evaluated by eight physical therapists using the new chart with transformed measures of seven principles of universal design performance. As a result, principle one (Equitable use) and two (Flexibility in use), comparatively evaluated as good, but another principles almost evaluated as neutral. It is estimated that the experimental design performance has universal design features and the design concept are well satisfied, but to be more useful, some subjects related to construction, adjustment mechanisms and safety treatments of tool have yet to be researched. And the production and supply system of the tool and a welfare policy have yet to be developed. It is thought that the supply of the wooden tool with play elements is guide to a universal design method for tools for children with physical disabilities.

Keywords

Universal Design Method, Children with Disabilities, Tools for Physical Training