Abstract of Doctoral Thesis
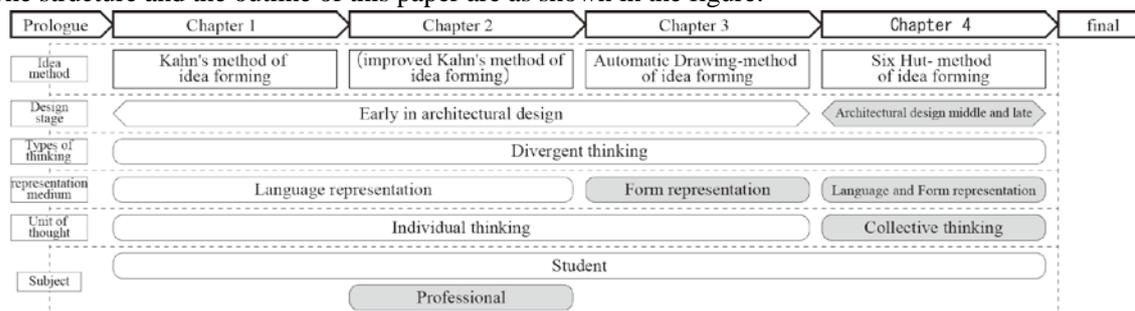
Title: Modeling and consideration of idea method focusing on representation medium and collective thinking in architectural design process

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In this paper, we report on the results of design development and design support tool for improving creativity and verification of its effectiveness for Architecture design which is a complicated design act. The structure and the outline of this paper are as shown in the figure.

First of all, focusing on thought of architect L. I. Kahn, who thought that meeting the skillful thought in building design is a shortcut to improvement of creativity, and created many prominent architectural works. Khan's lecture record by J. Robell pointed out that the systematization of the Kahn idea is being done and attempted to make it a method of thinking by conducting discourse analysis of the lecture record. And the effectiveness of the design method was verified by comparative experiment. However, the method that this chapter aims for is not to lead the same thing as Kahn's architecture, but to catch and follow the stepwise procedure of thought. Through keyword linkage in his discourse, Khan's idea process is organized into five stages of "inspiration", "institution", "realization", "form" and "design", and it can be used as a idea method Adjustment was made, and a frame of "Kahn's method of idea forming" was created. The findings obtained through comparative experiments using the idea method are as follows. Utilizing "Kahn's method of idea forming", I urged to gradually embody from the abstract level while considering information that physical region can't read. It was thought that the idea of creative thinking was obtained by "primitive thinking" in linguistic expression, and it was found that

it can be utilized as a method of "raising the design level" and "reducing the falling-off" in the educational site of the architectural design.

We are planning to utilize the problem setting that has few design constraints and no design site that was used in the above-mentioned method to the more practical design site, making it more subject to constraints and conditions, and corresponding "Kahn's method of idea forming " Improvement was made. From the analysis of each evaluation score, we confirmed the effectiveness of "improved Kahn's method of idea forming ". Through working-level experiments, the characteristics of using unique ideas and using waste-less ideas and concurrently examining plans were observed, and the tendency of economists' thought by practitioners became clear. In the early stages of the design, the practitioner strongly thought and reflect "primitive thinking" to "various rooms", which is presumed to be making efficient design thinking toward the social realization of the architectural design.

The same number of idea is made from the concept expressed by "language expression" and "form representation" against the effectiveness of "primitive thought" by language in the early stage of "Kahn's method of idea forming". And "Contents to draw beforehand are not prepared" Depictions like mischief drawing are likely to lead "Unexpected discovery". From the above two findings, I thought that the initial divergence by two-dimensional representation should be noticed. Therefore, we implemented the "Automatic Drawing-method of idea forming" incorporating "consciously unintentional form representation" early in the design stage. We confirmed the effectiveness of "Automatic Drawing-method of idea forming", and clarified that there is an effect to increase especially "novelty". And, "form representation" which can not be directly connected to the design object (task) like "not having concept" leads to conversion to new recognition and interpretation such as "Unexpected discovery", high evaluation I caught the possibility that it was connected to.

From the research that targets individual thinking so far, since the practical design act is an environment based on group work done by group, it is important to develop idea method corresponding to 'design by dialogue'. So we focused on "Six Hut thinking" proposed by Edward de Bono. It is said that this "Six Hut thinking" has an effect on "process loss" and "pathological phenomena of collective decision making". We modeled "Six Hut- method of idea forming" through discourse analysis and preliminary experiments using de Bono's books and verified its effectiveness. Experimental results confirmed the superiority of "Six Hut- method of idea forming". Subjects using the idea method are thinking from various viewpoints, and two points of "pathological phenomena of collective decision-making" "social scraping" and "synchronized pressure", and "factors necessary for the doom Lack of information "and" unclear purpose "are considered to have certain effects.