

RESEARCH ON THE CONSTRUCTION OF KANSEI DESIGN EDUCATION PROGRAMS AND DESIGN EVALUATION AND DIAGNOSTIC SYSTEMS

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ABSTRACT

The goals of Kyushu University User Science Institute (USI) is to generate true enjoyment by promoting a synergy between *kansei* and technology gained from the viewpoints of a wide range of users, and develop unconventional R&D systems to design the creation of knowledge, and to establish educational systems to cultivate human resources to support these systems, as well as build the world's first education and R&D center for user science. Starting from *kansei*, USI intends to fuse a wide range of study/research domains, including design, engineering, medicine, agriculture, and human and environmental studies. As such, USI is moving ahead with the development of the "*Kansei* Table," which is the backbone of the system for the fusion, and the "Quality Karte(Quality Chart)," a design evaluation diagnostic system. This paper outlines our approach to the *Kansei* Table, and explains the details of the role and benefits of the Quality Karte(Quality Chart) development including its development process. The Quality Karte(Quality Chart) is an evaluation tool for the *Kansei* Table. It sorts users into three groups: consignors, such as managers and salespersons, designers, such as designers and engineers, and receivers, such as end-users. By having all users use the same evaluation indicators, it clarifies the gaps that appear in design evaluation findings, which are thought to exist between all user groups when products and spaces are evaluated. The gaps are in the *kansei* aspects of user needs, and the objective of the Quality Karte(Quality Chart) is to make use of the gap factors in design development.

Keywords: *Humanization of Technology, Kansei design, Design Evaluation, Kansei Value Creation*

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1. DEVELOPMENTS IN ART & TECHNOLOGY=DESIGN EDUCATION IN JAPAN

In October 2003, Kyushu Institute of Design (KID), which had been formed in 1968 with Japan's first ever 'School of Art & Technology=Design', merged with Kyushu University. The Art & Technology=Design principle of the founding president of KID, Professor Shinji Koike, 'humanization of technology', continues to have as much meaning, and more, since the merger. The 'humanization of technology' involves restoring 'technology' to its original place and using it to maximum benefit, making the development of technology itself be based on human standards, and positioning the development of technology so that it contributes to human welfare and the improvement of people's standards of living. The mid-20th century, when the Institute began, the general interpretation of 'design' in Japan was that it was an element of technology tied to commercial results, involving surface-level processing, such as colour and shape, of scientific technology. Forty years down the line, the 'humanization of technology' has gained in importance as a way of resolving human and social issues, and the role of 'design' has expanded beyond surface-level elements of technology to fuse *kansei* and technology systematically in 'the humanization of technology' in various aspects of everyday life.

In this respect, Professor Koike's sharp foresight and depth of insight are proven by his concept of the 'humanization of technology', linking people and technology, by his identification of the 'missing technicians', or specialists who could put this concept into practice, and by his positioning of such specialists as 'designers' and the labelling of the academic research and educational field as 'Art & Technology=Design'. Furthermore, societal values today are in the process of transforming from an emphasis on objective elements such as function, reliability, and price to an emphasis on subjective or *kansei* factors such as feeling, sense, and emotional impression. In particular, the development of products and services, which until now revolved around the axis of technology-based goods, has switched to the axis of human *kansei*, revolving around the creation of values such as emotional satisfaction, emotion, and sympathy. This is creating a demand for personnel with a mission and awareness of these issues to lead innovation in industry, local communities, and daily life, which in turn is pressing the need for the development of specialists (producers, directors, creators etc.) of *kansei* values (*kansei* design) .

2. MAIN UNDERTAKINGS FOR THE DEVELOPMENT OF THE KANSEI DESIGN EDUCATION PROGRAM

2.1. Reconstructing knowledge: the restructuring of Kyushu University Graduate School of Design

After the merger, the Faculty of Design retained the structure it had for undergraduate education as the KID, with the Faculty providing education for 5 departments (Environmental Design, Industrial Design, Visual Communication Design, Acoustic Design, Art and Information Design). The Graduate School Master's and Doctoral Programs of Design were similarly constituted of 5 programs corresponding to the 5 departments. In response to changes in the social and industrial structures mentioned above, as well as issues related to the design industry, however, the Faculty of Design took advantage of the 'Graduate School and Faculty' system to restructure the graduate school from 2004.

In the first phase, a Master's Program of Design Strategy was established from 2006, increasing the number of graduate programs from one (Master's and Doctoral Programs of Design), as it had been from the KID days, to two. The Master's Program of Design Strategy was established in order to train a new breed of highly specialized professionals, who could either play a central role in linking various fields of design as design directors, or who would have the conceptual ability to make design decisions in the expeditiously developing design world, together with the practical ability to propel the concepts through the business process of planning, manufacturing, intellectual property issues, distribution and sales, and who could thus be employed as design producers, design directors, or design strategists. As a response to an urgent need for the development of personnel who can take on the responsibility of preliminary design strategy research and training in institutes of higher education and businesses, a Doctoral Program is also to be established from April 2008 in the Graduate Programs of Design Strategy. The Doctoral Program will develop personnel who, at the same time as being design strategists themselves, have the necessary academic ability in the field to be able to take responsibility for training personnel in universities and businesses, who have an extremely high level of proficiency as design strategists, and who 'have the ability to construct their own practical design strategy methodologies and carry out education and research'.

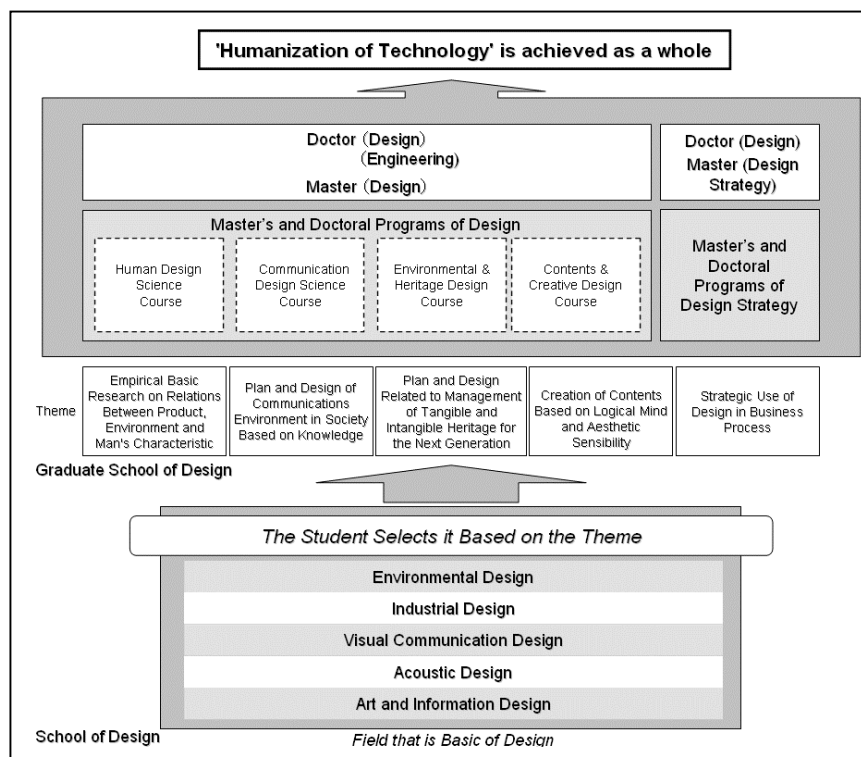


Figure 1: Restructuring of Kyushu University Graduate School of Design

In the second phase, restructuring of the Master's and Doctoral Programs of Design also became necessary and, making use of the establishment of the Programs of Design Strategy and the results of the Ministry of Education funded 21st Century COE Program, 'Design of Artificial Environments on the Basis of Human Sensibility', a restructuring of the graduate Programs of Design into 4 courses, is being carried out. It will consist of the 'Human Design

Science' that takes care of the foundational research area of the Faculty of Design and, in response to societal demands, dived into 3 specialist research areas, 'Communication Design Science', 'Environmental and Heritage Design', and 'Contents and Creative Design'. The Programs of Design Strategy, in collaboration with these 4 courses in the Programs of Design, will assume responsibility for linking with design business. The reform of the Master's and Doctoral Programs of Design into 4 courses is also to be implemented from April 2008. (Figure 1)

2.2. The fusion of knowledge: Kyushu University User Science Institute

At the time of the merging of KID and Kyushu University, in 2004, a grant was obtained for the 21st Century Super COE Program, Science and Technology Advancement Adjustment Expense of Ministry of Education, Culture, Sports, Science and Technology 'Kyushu University User Science Institute (USI)'. This is a 5-year program which will last until March 2009.

The aim of USI is to contribute to people's real happiness, from the perspectives of users (consumers, society, etc.) by promoting 'the fusion of *kansei* and technology', and by establishing new research development systems and supporting educational systems to develop personnel in order to create and use knowledge, thereby serving as the world's first education and research development base of this type.

In the first phase (April 2004-March 2006), the program began with the promotion of a pilot project on the fusion of *kansei* and technology spanning all specialist areas of Kyushu University. From April 2006 to March 2008, USI has been developing the basic blueprint of the '*Kansei* Table', which is the backbone of its original research development system, and trialling the *Kansei* Table in pilot projects. In the final year of this enterprise (April 2008-March 2009), the plan is to complete the education and research program based on the operating system of the *Kansei* Table, and to establish a new Graduate School (provisionally titled 'Master's and Doctoral Programs of *Kansei* Science for Users') in User Science (*Kansei* Design) in Kyushu University, with a view to developing a base for diffusion of activities within and beyond the university from April 2009.

USI's idea is closely interlocked with the Faculty of Design's concept of the 'humanization of technology', and the intention is to cut across and fuse the various academic fields of Design, Human-Environment Studies, Engineering, Medicine, Agriculture, Economics, and so on. The development of the 'Quality Chart' ('Quality Karte') Design Evaluation and Diagnostic Systems and the '*Kansei* Table', which is the central axis of the operating system of this fusion of research and education, are currently underway. [2]

The *Kansei* Table is a tool designed to facilitate the identification of user needs on the *kansei* level, and the linking and structuring of these needs to *kansei* knowledge. The *Kansei* Table consists of a matrix formed of a *kansei* axis and a knowledge axis. Knowledge appropriate to user needs is located in each cell of the matrix, and the system works by selecting *kansei* knowledge in accordance with user needs (including potential needs) and joining them together in a systematic fusion of knowledge.

The Quality Chart is an evaluation tool which divides users into 'providers', such as managers and businessmen, 'designers', such as planners and technicians, and 'end users'.

Through requiring each of these three groups of users to use the same set of evaluation indices, results are produced that highlight the gaps between various user groups in design evaluation of products and space. The Quality Chart is useful in that its ability to clarify gaps in user needs regarding *kansei* makes it valuable for planning and development in product design, spatial design and other related areas, and in that it can be used as a practical educational tool in the Master's and Doctoral Programs of *Kansei* Science for Users. [3][4] (Figure 2).

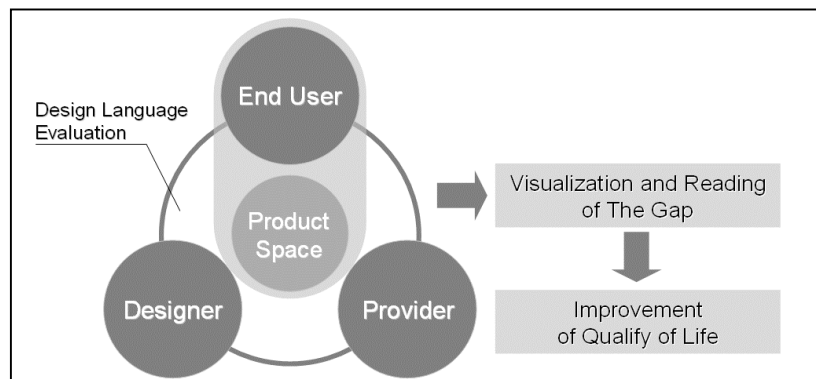


Figure 2: Quality Chart < Design Evaluation and Diagnostic Systems > Basic Concept

3. MASTER'S AND DOCTORAL PROGRAMS OF KANSEI SCIENCE FOR USERS: DEVELOPING KANSEI VALUE MANAGEMENT ABILITY

In The Master's and Doctoral Programs of *Kansei* Science for Users will consist of 3 specialist courses (*Kansei* Value Management Course, *Kansei* Communication Course, *Kansei* Science Course) and the User Science Centre, which will provide links with society. The nucleus of this new program will be the Graduate School of Design, but close relations with the Graduate School of Human-Environment Science and the Graduate School of Engineering will help to ensure the fusion of *kansei* knowledge across the board of Kyushu University. In the *Kansei* Value Management Course, which is at the core of the new program, students will learn about the chain of designers, providers, and end users involved in the creation of values, focusing on people's *kansei* and behaviour. They will learn techniques involved in the process of eliciting, forming, and evaluating users' *kansei* values (the *Kansei* Table and the Quality Chart), and they will learn about management methods that integrate all the processes. Those who have studied on this course will be expected to be able to go out into the business world and local communities where, in a whole range of diverse contexts, they will analyze users' *kansei* and behaviour, realize their latent and potential needs, and play an active role as producers creating new value domains. Within the course structure, the focus will be on specific planning strengths for drawing out *kansei* values, such as marketing and branding, specific creative strengths for representing *kansei* values, such as art and design, and specific evaluation strengths for judging *kansei* values objectively. Traditional boundaries between arts and science will be transcended, and the program will be open to people from a wide range of specialist areas.

The curriculum will centre on lectures and seminars on the use of the *Kansei* Table and the Quality Chart, and will consist of subjects dealing with the process of eliciting *kansei* values,

subjects dealing with the process of forming *kansei* values, and subjects dealing with the process of evaluating *kansei* values. The following main skills will be developed.

- The ability to elicit potential needs through observation of and insight into users, or discussions with users, and subsequently to construct hypotheses about new value domains.
- The ability as a creator to start from a hypothesis about *kansei* needs, and to guide it through to the proposal stage through investigation and editing of necessary knowledge and personnel.

In the management of *kansei* design education programs, there is a very close link between the *Kansei* Value Management Course and the Graduate School of Design Master's and Doctoral Programs of Design Strategy (see section 2.1). Essential to both educational programs are the Design Evaluation and Diagnostic Systems (Quality Chart). Concrete details of the use of the Quality Chart in developing content for the *kansei* design education programs will be reported later. (Figure 3).

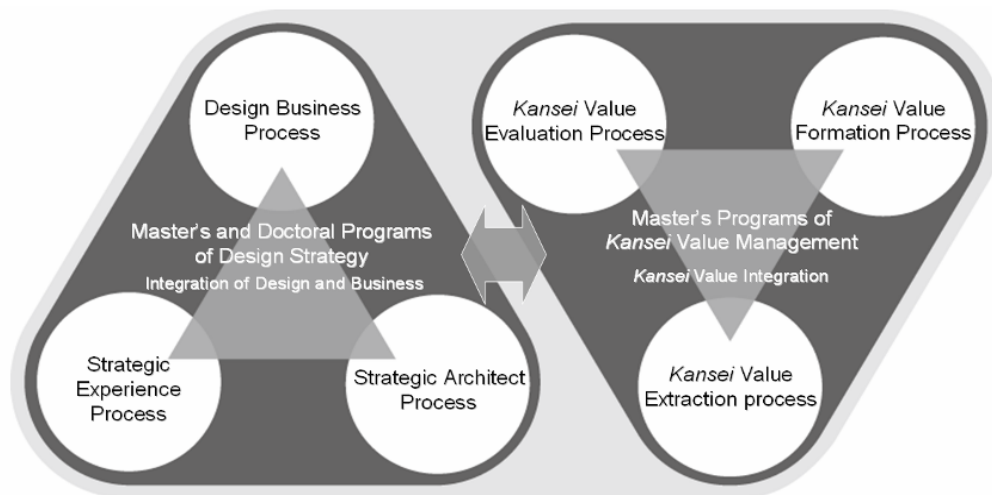


Figure 3: Program Configuration of Design Strategy and Kansei Value Management

NOTES

There is no exact equivalent of the word *kansei* in English. *Kansei* is an eastern concept that incorporates all the following meanings and more; spark, instinct, pleasure/displeasure, taste, feeling, emotion, and sentiment.

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