

## A Study on the Education of Master's and Doctorate multidisciplinary design in Korea

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**Abstract:** The changes in the design education in Korea were described through the history of the school of design of Kookmin university, and interaction design, a representative design in the field of multi-disciplinary design, were studied. The interaction is to be taught consisted of two axes: design methodology and application domains. Useful methods for education of interaction design are team-team class, city workshop, research walk, book workshop, paper colloquium, and project based class. Education of interaction design should be conducted with long-term perspective.

**Keywords:** Multidisciplinary design – Education – Interaction design – UX design.

[Resúmenes en español y portugués en la página 270]

### Introduction

History of South Korean design, industrial design such as product design, graphic design, and fashion design had been introduced in the 1970s, car design and communication design had been popular in the 1980s, green design, media design, web design had become active in the 1990s, and game design, interaction design, entertainment design in 2000s. From an industrial point of view, South Korea's design department has been formed mainly by large companies. Most of the initial members have been formed based on product design. In addition, visual communication design played a role in graphics and package and brand design, and since the 90s, the area of GUI (Graphical User Interface) was combined with the field of UI, creating the field of UI. The UI (User Interface) field was the beginning of recognizing research and evaluation as a result of what was considered a process for obtaining design output. Also, not only the visual, but also the auditory design has become a practical system of convergence design, considering it as a design output. In the 2000s, UI design expanded to UX (User Experience) design, including functional design or spec design. An extended system has been formed that considers all five senses.

Although the educational system is in line with the needs of society, it is difficult for the educational system to keep up with changes in society at the same time. Looking at the history of the department of Kookmin University, Korea's leading design school, new departments have been established in line with the trend of the times. In 1975, the College of Design began with three departments such as the Department of Architectural Engineering, the Department of Life Arts and the Department of Decorative Arts. In 1976, the Department of Fashion Design was joined the School. In 1980s, The Department of Decorative Arts was divided into the Department of Industrial Design and the Department of Visual Communication Design. The Department of Living Arts was divided into the Department of Metalwork and Jewelry and Department of Ceramics.

In 1998, the Department of Interior Design was newly established. The Department of Entertainment Design in 2010. Although new departments have been created to suit the trends of the times, Korea's undergraduate system is rigid in creating departments that fit the trends of the times, especially those of converged designs. In Korea, master and doctorate programs are easier to create flexible structures. Based on 20 years of experience in the operation of master's and doctorate programs in the field of interaction design as a graduate program, this paper studied the educational system and effective teaching methods in the field of multidisciplinary design.

### Education of Interaction Design

Interaction design defines the structure and behavior of interactive systems. Interaction Designers strive to create meaningful relationships between people and the products and services that they use, from computers to mobile devices to appliances and beyond (Interaction Design Association). UXPA (User Experience Professional Association) defines the user experience that every aspect of the user's interaction with a product, service, or company that make up the user's perceptions of the whole. User experience design as a discipline is concerned with all the elements that together make up that interface, including layout, visual design, text, brand, sound, and interaction. UE works to coordinate these elements to allow for the best possible interaction by users.

Interaction design has a multidisciplinary approach. If you look at the undergraduate majors of students majoring in interaction design, there are a variety of majors such as design, humanities, engineering, and management. In the field of design, students with various majors such as product design, visual communication design, fashion design, space design, architecture, and art will enter the interaction design. It is not easy to teach multidisciplinary interaction design to students with diverse

backgrounds a two-year master's course and a three-year Ph.D. Building an infrastructure that can teach multidisciplinary education is expensive, and it requires choice and focus to teach a lot of content in a limited time.

The knowledge system to be taught consisted of two axes: design methodology and application domains. We taught knowledge that should be in common; user centered design process, user research, information design, physical design, graphical design, auditory design, prototyping, evaluation knowledge, and selected his own specialties teaching knowledge that should be in common, and selecting and improving one's own specialties.

we define three layers of UX design; conceptual level, organization level, and designer level. In UX design, organizations existed and operated within the company before the UX concept became clear. The existence of an organization in a company was defined by role & responsibility, which was defined differently by company, depending on the environment it belonged to.

The conceptual level for the UX direction should be understood. What should be done to design the user experience in products and services should be defined. At this stage, cooperation across the enterprise is needed, not individual organizations. At the organizational level, the organization's roles and responsibilities should be defined, and the specific tasks to be done are defined. Work at the organizational level can understand the specific knowledge systems that designers need to perform. The UI roles were divided into user surveys, information structures, physical UI, graphic UI, sound UI, usability evaluation, and localization [Pan, 2010]. This is a classification centered on the manufacturer and was sometimes used as a logical UI (Logic UI) for information structures. Service design is also very related in interaction design. Students majoring in interaction design often work as service designers after graduation. In Korea, service design is popular after 2010. The Korean government carries out many of its projects from the point of view of service design every year. Service design also can be defined the roles; service strategy, research, service concept design, service specification, integrated communication design, integrated system design, integrated operation design, service evaluation, launch, operation [Pan, 2012]. Service specification defines what benefits a service offers users. Blueprints and others help you see the full picture provided by the service. The Kano model also sets the principle of function priority by dividing it into essential, functional, and attractive. Service architecture design configure the service process and delivery method. Because the service system consists of tools and employees, the tool and the employee have a plan of work. An important aspect of service architecture design is the user's involvement, although the level of engagement depends on the nature of the service. In other words, the service architecture consists of a service system and a user that consists of tools and employees. The service evaluation elements have a service interface, location and time (Jhang & Pan, 2012).

The main stem of teaching is the axis of design methodology and the axis of design application. The design methodology axis revolves around the skills to be learned,

understanding user-centered design, understanding the need analysis phase, design phase, and methodology of the evaluation phase. This design methodology can be applied to all areas, not to specific areas, but there are many areas in the market structure that are more involved with each era. It has been applied to HCI in 1980s, web in 1990s, home appliances and mobile in 2000s, and automobile and service sectors in 2010s.

In order to share knowledge in this field, academic societies and associations have also made major contributions, including the Korea HCI conference ([www.hcikorea.org](http://www.hcikorea.org)), the ergonomics society of Korea([www.esk.or.kr](http://www.esk.or.kr)), Korean society of design science ([www.design-science.or.kr](http://www.design-science.or.kr)), Society of Convergence Design ([www.converge.or.kr](http://www.converge.or.kr)), User experience professional association Korea ([www.uxpa.kr](http://www.uxpa.kr)), and the Korean Service Design Council([www.servicedesigncouncil.kr](http://www.servicedesigncouncil.kr)). The Korea HCI conference is one of Korea's leading multidisciplinary conference, participated by people with majors in humanities, design and engineering.

## Useful education methodologies for interaction design.

### Team-team class

There are two teachers who teach in one class. There are two different disciplines taught by experts, one who is strong in theory and the other who has a lot of practical experience. It is a useful way of teaching in the multidisciplinary field, although it is more resourceful than teaching by one person. In Korea, the recruitment of professors is very strict and conservative, so it is difficult to easily recruit school professors. By conducting classes through collaboration with outside experts, it is not only education for students, but also for professors who work together. The fast-changing times are often difficult for professors alone, and outside experts do not understand the school system well, which is complementary.

### City workshop

Workshop is a useful way of teaching in the field of convergence, as people from various fields gather together, and proceed with purpose in a comfortable space. Workshop also has a process. The process can be organized from a point of view before workshop, during workshop, and after workshop, and classified from a purpose perspective as creative workshop, design workshop and critical workshop. city workshops, where network schools are established and conducted annually with a set theme in a set city, can be participated in by all design fields, and can continue to be conducted with various schools outside the country.

### Research walk

This is a doctoral class, which is based on travel. With a specific subject, it lasts about a week, and the effectiveness of the class and the flow of the participants is high. The purpose of this class is to have human and cultural understanding in the field. Discuss while working to-

gether on the tasks of routine, foods, accommodation, mobility, transaction, entertainment, etc. There are in-depth discussions on specific topics for each trip.

### Book workshop

It is a workshop where Ph.D. courses help write books. It has a lot of participating students, and the more diverse it is, the more useful it is. It is conducted once every six months and encouraged to write a book about three times (1 - 2 years) participating. Students help write their own books by sharing the structure of knowledge with one another and by recognizing different topics. They also guide each other so that they can write books together.

### Paper colloquium

In the case of multidisciplinary design, there is a great diversity of research topics among students. Sharing research subjects can understand other areas and help the subject of this study. It also provides basic training for collaboration. Due to the characteristics of the design field, the structure of the paper varies, and the methods of research vary. There is also an exchange of research methods.

### Project based class

Because the project base deals directly with the problems of reality, it can accumulate knowledge of process perspectives and applications. In South Korea, enterprise projects are not long, and often carry out for three to six months, while government sponsored projects have many long-term tasks of two to five years. The nature of the enterprise project depends on the nature of the application field and the type of output. The content of the project varies with the times, with projects related to the Web in the 1990s, digital home appliances and mobile in 2000s, and automotive and service sectors in 2010s. After 2015, there will also be many tasks in the form of collaboration with start-ups.

### Directions of interaction design education

Due to the characteristics of the multidisciplinary field, the methodology of the new field continues to be added, the scope of design is expanded. The more so, the more we have to define and educate what is at the core of essential education. The key to interaction design is to understand people. The aim is to improve quality of life, and the design methodology for this should be conducted strategically based on collaboration.

The diversity of professors and students is very important. For the sake of student diversity, it is important to recruit students from different backgrounds of different majors, but it is also important to recruit students from different countries. Efforts are being made to recruit students from various countries, and the system is being established. Since selecting professors from various backgrounds has limitations, it is useful to provide education in conjunction with outside schools, research institutes and companies. Design methodology has been employed in various fields, including cultural anthropology, psychology, management, engineering and sociology, and is systematically

organized, except for changes caused by advances in technology such as artificial intelligence, big data and Internet of things. This makes an in-depth understanding of the application more important. Since the understanding of the application field is not within a short period of time, the department should strategically select the appropriate field and proceed for a long period of time. Just as market segmentation is done in the making of products and services, the education of masters and PhDs should be segmented into two categories. Doctors often have poor curricula because of their low number of people and self-directed research. Ph. D student is a researcher and should not neglect the educational curriculum. Efforts are needed for a course of education only for Ph.D students.

### Conclusion

Interaction design is a multidisciplinary design. In Korea, the major in interaction design has produced the Advanced UX designers required in Korea for 20 years, and have been active in many companies and schools. The key to interaction design is to understand people. The aim is to improve quality of life, and the design methodology for this should be conducted strategically based on collaboration. The interaction is to be taught consisted of two axes: design methodology and application domains. Useful methods for education of interaction design are team-team class, city workshop, research walk, book workshop, paper colloquium, and project based class. Education of interaction design should be conducted with long-term direction.

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**Resumen:** Los cambios en la enseñanza del diseño en Corea se describieron a través de la historia de la escuela de diseño de la universidad de Kookmin, y se estudió el diseño de interacción, un diseño representativo en el campo del diseño multidisciplinar. La interacción que debe enseñarse consta de dos ejes: metodología del diseño y ámbitos de aplicación. Los métodos útiles para la enseñanza del diseño de interacción son la clase en equipo, el taller urbano, el paseo de investigación, el taller de libros, el coloquio de ponencias y la clase basada en proyectos. La enseñanza del diseño de interacción debe llevarse a cabo con una perspectiva a largo plazo.

**Palabras clave:** Diseño multidisciplinar - Educación - Diseño de interacción - Diseño UX.

**Resumo:** As mudanças na educação em design na Coreia foram descritas através da história da escola de design da universidade de Kookmin, e o design de interação, um design representativo no campo do design multidisciplinar, foi estudado. A interação deve ser ensinada em dois eixos: metodologia do design e domínios de aplicação. Métodos **úteis** para a educação do design de interação são a aula em equipe, a oficina da cidade, o passeio de pesquisa, a oficina de livros, o colóquio de papel e a aula baseada em projeto. A educação do design de interação deve ser conduzida com uma perspectiva de longo prazo.

**Palavras-chave:** Design multidisciplinar - Educação - Design de interação - Design UX.

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## As Testemunhas de Jeová: a recepção da mensagem religiosa através das mídias

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**Resumo:** Este artigo propõe um recorte de Trabalho de Conclusão de Curso em Produção Publicitária apresentado no Instituto Federal do Sul de Minas Gerais. Este estudo aborda a identificação das mensagens transmitidas pelas Testemunhas de Jeová, foram analisadas as peças gráficas impressas e digitais. Foi verificado a importância do Planejamento Estratégico em Design para o desenvolvimento do Projeto Gráfico Visual utilizado como suporte para a transmissão e compreensão das mensagens elucidadas tanto para o público das Testemunhas de Jeová quanto de outras religiões. Os resultados apresentados mostraram que as mensagens atingiram de formas diferentes seus entrevistados, o Design foi fator decisivo.

**Palavras chave:** Comunicação – Design Gráfico – Religião – Mensagem – Impressos.

[Resúmenes en inglés y español en la página 280]

### 1. Introdução

As Testemunhas de Jeová são conhecidas mundialmente por serem um grupo religioso que prega a palavra de Deus por meio de vários métodos, usando desde a Bíblia a outras publicações. A pesquisa consistiu em entender como elas atingem um público mundial usando suas publicações gráficas e digitais para transmitir sua mensagem, as técnicas de abordagem e quais resultados obtêm. As Testemunhas de Jeová produzem publicações em mais de 750 idiomas, com uma equipe internacional de redatores, tradutores e diretores de arte. Todos são Testemunhas de Jeová e prestam serviço voluntário. Em 2013 em torno de 2700 tradutores trabalharam em mais de 190 lugares. Possuem uma equipe internacional de pessoas que trabalham para abordar assuntos multicultu-

rais que atraem o interesse de leitores de todo o mundo. O texto original é feito em inglês, a sede mundial fica nos EUA, com Departamento de Arte sediado no Centro Educacional da Torre de Vigia, em Patterson, Nova York. Os conteúdos são construídos a partir de um texto que, depois de composto, é editado e traduzido. Depois é enviado para outros países que traduzem com exatidão as palavras utilizadas, para transmitir o sentido exato do texto original para a língua-alvo. As Testemunhas de Jeová desenvolveram um sistema de editoração eletrônica multilíngue, o MEPS (Sistema Eletrônico de Fotocomposição Multilíngue) que tem compatibilidade com vários idiomas. São feitos vários esforços para que a mensagem traduzida tenha o mesmo sentido em línguas diferentes.