Understanding the relationship between research and practice in design from industrial point of view in Korea

**Kun-Pyo Lee**  Korea Advanced Institute of Science and Technology, Korea  
**Soon-Jong Lee**  Seoul National University, Korea

**Abstract**  
The paper addresses the issue of the relationship between research and practice through case study. A survey has been conducted to understand the industrial demands for design education in Korea with the collaboration of three key representative organizations for design: education, industry, and government. 400 designers with more than 1 year experience in industry participated in the survey through internet. 22 design managers and designers also participated in qualitative in-depth interviews. Differences in results were found according to the length of working experiences. The longer working experience designers have, the more designers need interdisciplinary knowledge such as psychology or marketing while less experienced designers want skills like communication or computing. The results also showed somewhat differences depending on sub-disciplinary fields. Product designers were shown to need understanding user needs; Visual communication designers were shown to require presentation skills and creativity; Environmental designers were shown to feel their deficiencies in engineering knowledge or computer tools.
Introduction
Since the summer Olympiad game at Seoul in 1988 the environment of design in Korea has been rapidly changed: the value of design is well recognized in industry, government, and general people; the number of design schools has been substantially increased (390 universities offering design education and 119, 397 design-major students at 2002) (KCUE 2002). Among changes, most remarkable one in the relation with education is the awareness of the importance of design education and research from industry and government. Until quite few years ago, industry hired students from design school without serious consideration of their specialities and positions in industry. Industries claimed that they should re-educate students in practical terms thus ignoring the role of education. However, now industries have begun to recognize the value of the specialized education for coping with ever-changing business environment. In addition, in the past, the term ‘design research’ was rarely mentioned and practiced before in Korean design community. If any, working designers regarded it as some ‘innocent academic activity’ while academicians criticize them as mere craftsmen. The main reason for lack of research activity was ‘no market’ for design research before mid-eighties. Designers did not have any need to spend time and effort for intangible research for designing product of minor modification and they sought for only final concrete result. As a result, research activities in graduate schools were not so much active either. Nowadays, however, thanks to rapid development of technology, mainly IT, Korean industries have begun to realize that they cannot rely on labour-intensive low-tech products and they need to develop their own product with new technology. Accordingly, Korean government and design industry recognize that design is key element for developing competitive product. Particularly, government realized that the long-term investment on design education is fundamental prescription for the problem. Government badly wants the design education to reply to the needs from industry. As a way of the policy, KIDP (Korean Institute of Design Promotion), the government-supported organization, conducted a research project of surveying the industrial demands for design education and establishing the policy of specialized design education, thus connecting practice and research. This paper introduces the result of survey to show how industry views design education and eventually how the advanced education at doctoral level should be positioned in design.

Establishment of Discipline: Cycle of Practice, Education, and Research
The research is main tool used by education for generating knowledge which, in turn, is applied to and realized in industry. In the meantime, the practice is major means implemented by industry for constructing real world from which, in turn, school extracts knowledge. This reciprocal relationship between education and industry shows that they should closely collaborate with each other for mutual co-existence. American design theorist, Jay Doblin elaborated the relationship between practice, education, and research in his model, DesMod (Doblin 1982). Particularly his model shows the relationships among three key elements of discipline along how a ‘discipline’ is established. (Figure 1)
He argued that in order to be called a discipline, a cycle of process of 'practice', 'education', and 'research' should be gone through step by step. At first, without any knowledge, there is only a practice of trial and errors. Then countless trial and errors gradually generate some knowledge which people wish to share with others in the hope that others do not experience same errors again. As this sharing of experience becomes formal and legitimate, the 'education' is established. Then as education gets more deepened and expanded, the rigorous theories and body of knowledge are required. Finally research gets involved in the generation of knowledge and theory. Once this stage of research is reached, the reverse process of knowledge use gets started. Theories generated from research feedback to education which, in turn, teaches practice, thus finalizing the process of establishment of discipline. Practitioners make things with synthetic activity while researchers are satisfied when they've explained by analytic activity. According to this model, design still cannot be said to reach this point yet. Since BAUHAUS reached at the stage of education, design is still wriggling around the point of education: students learn design; they get the job and return to the school with practical experiences to teach. Design has been neglected to build body of knowledge which can be only accomplished through doctoral level of research and academic activities such as conference and publication. In recent years, the emergence of doctoral education in design, diverse international design conferences and publication of design journals can be said the movements toward establishing a field of design as 'authentic discipline'.

**Survey of Industrial Demand for Design Education in Korea**

**Overview**
As mentioned above, the survey was conducted for identifying industrial demands for specialized design education in Korea through end of 2000 to early of 2001. At first qualitative study of in-depth interview was carried out with 22 design experts including managers in big corporations and independent design consultancies. Interviewees covered evenly three major fields of design: product design, visual communication design, and environmental design. Three main issues of design process in industry, education demanded by industry, and designer's image demanded by industry were covered in interview. Then, the result from qualitative study was fed back to the design of framework and questions for quantitative survey. The survey was carried out with 400 designers with more than 1 year working experience. Subjects include in-house designer working in corporation or design consultancy, or freelancer in various design fields. The result from survey was combined with the result from interview for the final analysis. The process of the study is shown in Figure 2.
Results

Results from qualitative interview and quantitative survey were analyzed to find out the implications to the design education and research (Lee, et al. 2002). At first, the result from in-depth interview with design experts is introduced and then it is followed by quantitative survey with working designers. The following are summarized results from the qualitative interview with design experts including managers.

- Designer’s fundamental qualifications required by managers
  Designers’ fundamental qualifications required by managers include experimental spirit and strategic mind, and knowledge of emotional engineering, marketing, psychology, human factors, design planning, design process, and fluency in foreign language.

- Desirable role of designer demanded by managers
  Three types of designer’s roles were shown to be most desirable by managers: designer as coordinator, designer with fundamental knowledge in interdisciplinary fields, and designer as creator.

- Demand for specialized design education
  Manager level designers were shown to demand strongly specialized design education in three terms: specialized education according to the educational system (junior college for skills and 4 year university for design business knowledge and logical thinking); specialized education by region with the collaboration of local industries; specialized education by design process (research, styling, and manufacturing).

The results from quantitative survey with working designers with more than 1 year experience are summarized in Table 1.
Table 1: Results from quantitative survey

<table>
<thead>
<tr>
<th>Questions</th>
<th>Product designers</th>
<th>Visual communication designers</th>
<th>Environmental designers</th>
<th>Working experiences less than 2 years</th>
<th>Working experiences more than 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most deficient qualifications for design tasks</td>
<td>Understanding user’s needs</td>
<td>Presentation skills</td>
<td>Engineering knowledge &amp; Computer aided tool</td>
<td>Presentation skill</td>
<td>Marketing &amp; information management</td>
</tr>
<tr>
<td>Educations helpful for design practice</td>
<td>Creative methods &amp; concept development</td>
<td>Creative methods &amp; concept development</td>
<td>Creative methods &amp; concept development</td>
<td>Creative methods &amp; concept development</td>
<td>Creative methods &amp; concept development</td>
</tr>
<tr>
<td>Criteria for hiring new designer</td>
<td>Creativity</td>
<td>Presentation skills</td>
<td>Integrity</td>
<td>Presentation skills</td>
<td>Practical experience</td>
</tr>
<tr>
<td>Designer’s qualification demanded by companies</td>
<td>Concept development</td>
<td>Presentation skills</td>
<td>Concept development</td>
<td>Presentation skills</td>
<td>Concept development</td>
</tr>
<tr>
<td>Most important attributes of design education</td>
<td>Industry oriented education</td>
<td>Industry oriented education</td>
<td>State of art facility for education, Industry oriented education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nature of specialized design education</td>
<td>Specialized design education by design process</td>
<td>Specialized design education by design process</td>
<td>Specialized design education by design process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designer’s hope for further training</td>
<td>Emotional engineering</td>
<td>Communication</td>
<td>Human factors, psychology</td>
<td>Advertisement, Public relations</td>
<td>Communication, Fine art, Human Factors</td>
</tr>
</tbody>
</table>

Findings

As shown above, the results from interview with design experts and survey with working designers in different fields of design shows some differences. Following are major findings.

- Demands from industry are different between managers and working designers
  Managers put more emphasis on interdisciplinary knowledge while working designers emphasize presentation skills and practical experiences.

- Results are different depending on different design fields
  Product designers generally demand the education of understanding user needs, human factors, concept development whereas visual communication designers mostly want to have the education of presentation and communication skills, and environmental designers were shown to feel their deficiencies in engineering knowledge or computer tool.

- Length of working experience has effects on the result of survey.
  The longer working experience is, the more designers demand the comprehensive design education, while designers with shorter experiences want to have more skill-oriented design education like presentation skill.
Conclusion

The findings from the study strongly imply that design in Korea is still wandering around half-through cycle of practice and education in Doblin’s model. However there is emerging indication of progress toward research in managerial levels of designers, designers with longer experiences, and product design field. They do not demand just practical skills for design tasks in hand but knowledge required for interdisciplinary works, longer temporal perspectives, abstract levels and comprehensive domains, which are known to be attributes of research. The study suggests that doctoral education in design should be further fully developed in order to extend education to the research level so that the authentic discipline of design can be established. However, in order to have complete picture of the relationships among practice, education, and research, the survey from educational point of view should be also further considered: how design educators view industry and theory. In addition, the further comparative surveys among different countries may show some interesting results.

References

