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# The profession of industrial design in Turkey: the correspondence between education and practice

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## Abstract

*This paper discusses the results of a survey conducted in Turkey to collect data on industrial design graduates' profile and employment history, and to investigate the correspondence between education and practice through a comparative study of the practitioners' and managers' views on industrial design practice.*

*The findings of the survey indicate a significant discrepancy between the designers' self-perception and the managers' views of the designers' skills and knowledge, which suggests a major communication gap between the two groups. Although both designers and managers seem to agree on the nature of industrial design activity in companies as being mainly concerned with aesthetic appeal and functional improvement, the lack of design culture or awareness coupled with inadequate consumer and market feedback cause design activity to be dominated by the issues of production and cost. Thus the designers' technical background is perceived as being inadequate by the designers themselves, and as the very last qualification identified with the design professionals by the managers. The paper offers an overall interpretation of the conclusions drawn, and develops a set of suggestions for design education in Turkey.*

## 1 Background

Industrial design is a rather new and poorly promoted profession in Turkey. The history of the profession reveals an educational rather than industrial background. Although industrial design education has thirty years of history in Turkey, it has become a fairly well known profession in the last decade. Currently there are four state universities, one located in Ankara, three in Istanbul, with industrial design departments offering bachelor's degrees. The departments in Istanbul have both master's and doctoral programs; the one in Ankara opened a master's program last year. The recently established Izmir Institute of Technology offers a master's degree in industrial design; and again a recently established private university in Istanbul has a four-year undergraduate program in industrial design. As far as the professional organizations are concerned, there is one non-governmental professional association in Turkey, the Society of Industrial Designers (ETMK) established in 1988. In Turkey there is no governmental body or program for the promotion of industrial design. Furthermore the research into the local issues of industrial design education and practice is quite limited and information on

the graduates' professional experience is almost non-existent. The survey this paper is based on was conducted to collect initial data on the graduates' profile and employment history, and to investigate the correspondence between education and practice through a comparative study of the practitioners' and managers' views on industrial design practice.

A postal survey was conducted in July 1996 and covered two separate questionnaires sent to 528 industrial designers and 177 companies to which 104 designers and 36 companies responded. The survey included the industrial designers who were the graduates of three universities (by the time of the survey others had not graduated any student) with educational histories ranging between 10 to 30 years; and all the companies which had ISO 9001 standard, registered designs in Turkey, or employed an industrial designer at least once. By the time of the survey the estimated number of industrial design graduates in Turkey was 1100.

Concerning the general profile of the industrial designers, the average age of the respondents was 30. The number of male and

female respondents was almost equal. An important limitation for the study, however, was that the majority of the respondents were graduates of METU located in Ankara. Only one fifth were graduates of two other universities located in Istanbul. Regarding the current place of employment, more than half of the respondents were located in Ankara, one fourth in Istanbul and the rest in other cities in Turkey or abroad.

Out of 36 companies, 26 answered questions concerning the industrial design activity in their organisation. Design activity in two companies, however, was not within the scope of industrial design. Among these 24 companies 17 were large-scale production companies, the majority of which were located in Istanbul and other major industrial cities. As far as their distribution to sectors is concerned, six of them were in white goods and electrical household appliances, five in furniture, three in building components, three in electronics, and the rest from other sectors such as packaging, automotive, etc. Concerning the managers responsible from the industrial design activity in those companies, the number of managers with an industrial or other design background was almost equal to the ones with an engineering background.

## 2 The correspondence between industrial design education and practice

### *The occupational profile of industrial designers*

The professional history of industrial designers suggested two major occupational categories:

- Industrial and other design fields, (mainly furniture and interior design): Among all the respondents the occupational history of 28% included jobs both in the field of industrial design and other design fields. 83% of the designers in this group worked in interior design, and 65% in furniture design at least once throughout their professional career. Furthermore all the designers who worked in furniture design also worked in interior design. Therefore this group can be characterised as mainly consisting of industrial design graduates working as interior and furniture designers. The average age in this group was 31, the

average work experience 8 years, and the number of women 12 out of 29.

- Industrial design: Among all the respondents the professional history of almost 24% included jobs mainly in the field of industrial design. In terms of work experience and professional qualifications however, only 14 cases out of 25 can be characterised as a career in industrial design. The majority of these 14 designers were specialised in white goods and electrical household appliances, and electronics; out of these 14 three worked as design consultants (one residing abroad). In the *whole group* the average age was 30, the average work experience 7 years, and the number of women 14 out of 25. In the *subgroup* on the other hand, the average age was 33, the average work experience 10 years, and the number of women 8 out of 14.

Apart from these two major categories making up 52% of the respondents, the rest was distributed as follows: 18% of the respondents worked at universities and the majority of this group consisted of rather recent graduates working at industrial design departments as research assistants. Again 18% of the respondents did not practice industrial or any other design; a considerable number of designers in this group worked in the fields related to marketing, retailing and management. 12% worked mainly in other design fields; the majority in this group worked in interior or multi-media design.

### *The quality of industrial design education*

Industrial designers were asked whether the industrial design education they received was adequate to practice their profession if they had work experience in industrial design. 63% of the designers chose the option "it was adequate in general terms but had deficiencies in many respects." Nevertheless a considerable number of designers (16%) marked the option "I believe I acquired the necessary skills and knowledge an educational institution should provide." 10% of the designers made no response to the question.

Concerning the subjects perceived as missing or not adequately covered in industrial design education, regardless of the respondent's

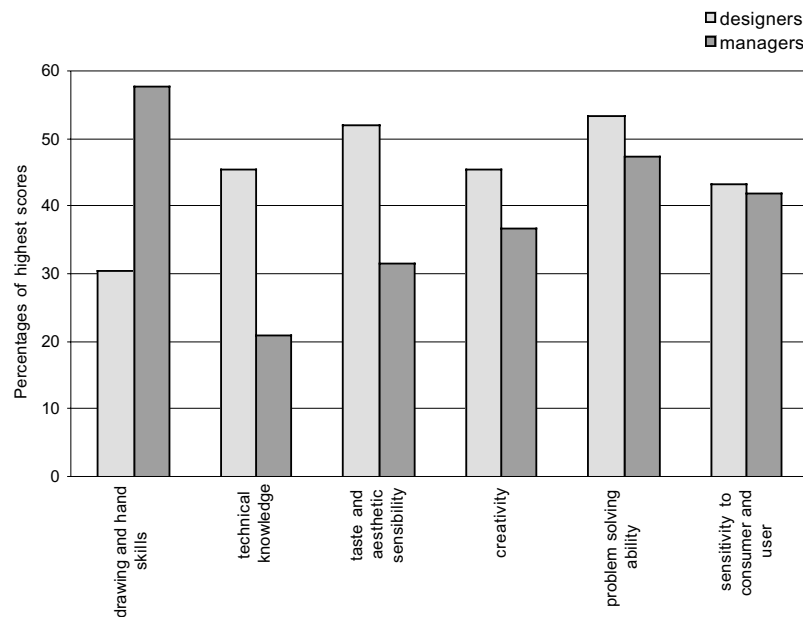


Figure 1 The knowledge and skills employed in professional practice

educational institution, the three most significant ones were computer-supported design, production cost analysis, and materials and manufacturing methods.

#### *The knowledge and skills employed in professional practice*

Industrial designers were asked to rate the extent to which, in their current job, they were using their professional qualifications in terms of issues of creativity; taste and aesthetic sensibility; drawing and hand skills; problem solving ability; and technical knowledge. The managers on the other hand were asked to rate the extent to which they thought industrial designers working in their organisation were competent in terms of the same issues.

Figure 1 shows the comparative percentages of the *highest scores* for each issue. The comparison was made between the responses of designers who practised industrial design by the time of the survey and managers. According to the managers, designers were most competent in drawing and hand skills; problem solving ability was the second most mentioned issue. Technical knowledge on the other hand, was the least mentioned issue by the managers. Industrial designers mentioned problem solving ability and taste and aesthetic sensibility as the top two qualifications they utilised in their professional life.

Other significant observations were as follows: Drawing and hand skills, which were the least mentioned qualification by the industrial designers as utilised most, were assessed by the managers as the qualification in which the designers were most competent. Although technical knowledge mentioned by nearly half of the designers as one of the qualifications they utilised *most*, it was the *least* mentioned issue among the ones the designers were found to be most competent by the managers.

### 3 Managers' and designers' perspectives of industrial design practice

#### *The nature of industrial design activity*

The designers and managers were asked to consider the extent to which the industrial design activity in their organisation covered the following activities: (1) overall modifications leading to a product with a functional edge, (2) product modifications with an emphasis on aesthetic appeal, (3) to adapt a foreign product to the local market with minor modifications, and (4) to adapt a foreign product to the existing manufacturing conditions. The resulting pattern was found to be similar for managers and designers (Figure 2). Both managers and designers suggested that the industrial design activity in their organisation was mostly concerned with modifications of an aesthetic nature. The second most rated activity was the "functional edge." The other two activities were rated

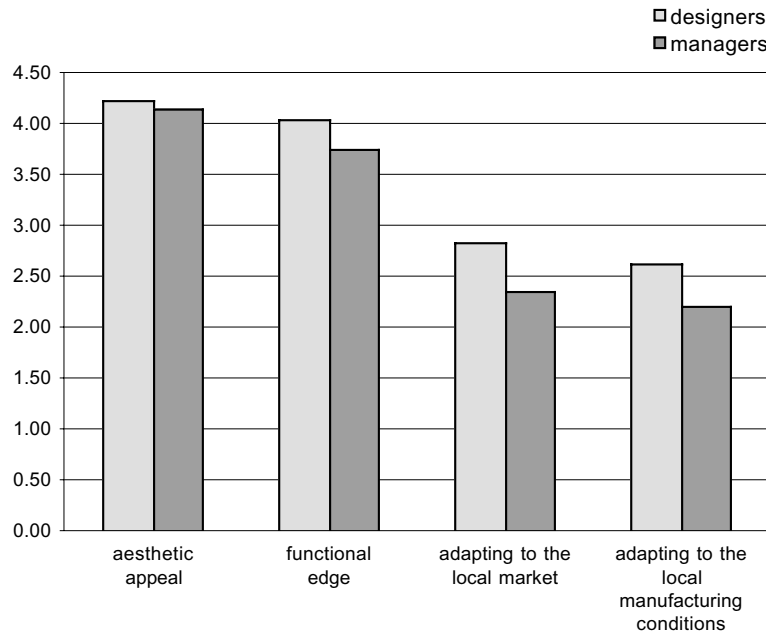


Figure 2 The nature of industrial design activity

considerably low in comparison to the first two activities.

The significant dominance of "functional edge" over "adapting a foreign product to the existing manufacturing conditions" seems to be in conflict with the results of another survey conducted earlier (Er, 1993). In Er's study, Turkish designers considered "imitation of foreign products" one of the top two factors "discouraging industrial design activity in

Turkey." The discrepancy between the findings may be ascribed to the discouraging effect, on the respondents, of the decree for the protection of industrial designs issued in 1995.

**The factors influential in industrial design activity**

The designers and managers were asked to evaluate the extent to which various factors were influential in industrial designs in their organisation. According to both managers and

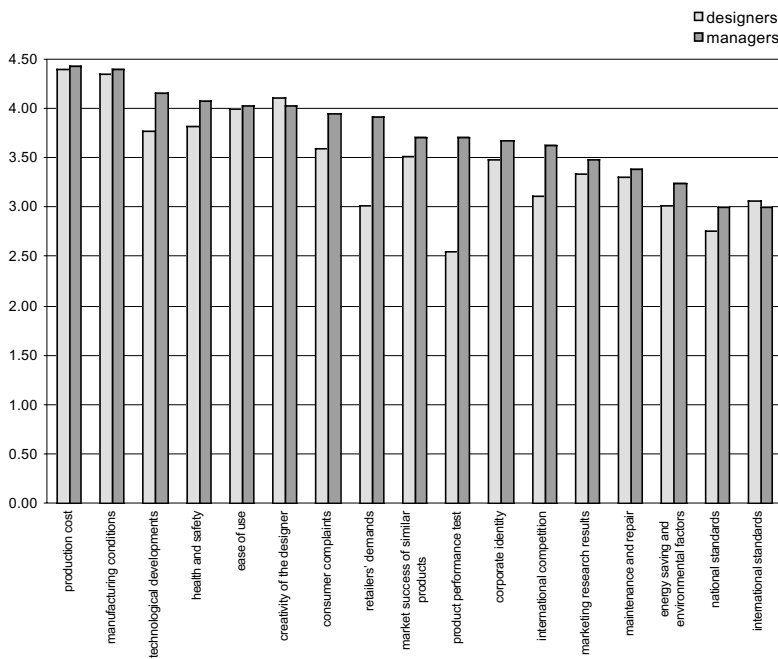


Figure 3 The factors influential in industrial design activity

designers, the most important two factors determining industrial designs in their organisation were production cost and manufacturing conditions (Figure 3). The third most important factor was "technological developments" for the managers, and the "creativity of the designer" for the designers. There were significant discrepancies between managers' and designers' assessments concerning the factors retailers' demands, product performance tests, and international competition. Designers rated these factors significantly low. Since these are more relevant factors in the context of large-scale organisations which constituted the majority of the companies in this study, the significant differences between designers' and managers' views on these three factors seem to be caused by the diversity of the structure and scale of organisations for which the designer population in this study worked.

International and national standards, energy saving and environmental factors in the use of the product, maintenance and repair, and market research results constituted the least important group of factors, which may imply that companies are production rather than customer-centred. The factor "results of market research" seems to be a less determining factor in comparison to retailers' demands or the market success of similar products, which may imply that companies concentrate on more indirect indicators of potential market success.

#### 4 Personal comments by designers and managers

Both managers and designers were prompted to write down their views, observations and future projections concerning the design practice in their organisation. There were two significant issues emphasised by a few managers:

- The first one was about the growing needs concerning the nature of design activity in their company: The need to form interdisciplinary design teams was raised by two managers, and to develop culture sensitive approaches and technically competent products in response to the requirements of the global market by one manager.

- The second one included suggestions for a more direct contact between industry and education. Three managers suggested more co-operation between universities and industry. One of the managers proposed student internship and educational projects taking the local industrial demands into account. Another manager proposed more technologically updated educational curricula.

In addition to the question above, designers were also asked to write down the problems they had as industrial designers in practice. Their answers to both questions raised four important issues:

- The first and most frequently mentioned issue was the need to promote the industrial design profession; the emphasis was on the lack of design culture and awareness in companies concerning the function of design and the ways in which designers work.
- The second issue was also a very frequently raised one and can be considered as a consequence of the first problem: a perceived communication gap between designers and managers, and other professionals. One designer suggested that this problem stemmed from the differences between the thinking styles of managers and designers: managers with an engineering background were reluctant to accept that more than one solution could satisfy the same set of criteria. Designers' comments on this issue included solutions at educational level. One designer suggested developing designers' communication skills. Another designer proposed integrating introductory design knowledge into the curricula of the engineering and management departments.
- The third problem, again in relation to the first one, was mainly concerned with the management of design activity in companies in terms of time, function, role and policy. Three designers raised the problem of missing consumer awareness and market feedback to the design process. Three other designers viewed their practice as too much dominated by technical factors such as manufacturing conditions and cost;

one of them attributed it to the higher status of engineers. According to two designers, design was not positioned properly in the organisation of the work system in their company. According to them and three other designers, the design phase was not given enough time in the product development process. One of the designers suggested multi-disciplinary design teams to enhance the effectiveness of design and to facilitate the interaction between the components of the work system.

- The fourth issue was related to the problems stemming from the designers' educational background: lack of technical knowledge, weak management knowledge, and missing computer-aided design skills were raised by some designers.

### 5 Conclusions and implications for industrial design education

In Turkey a considerable number of industrial design graduates works in areas such as interior and furniture design for which they lack specific skills and knowledge. The occupational profile of industrial design graduates suggests that educational institutions should review their "no specialisation" policy in industrial design education.

The issues mentioned by the designers as missing or inadequately covered in education

are parallel to the issues rated both by designers and managers as the most significant in professional practice: computer-supported design, production cost analysis, and materials and manufacturing methods were the top three subjects not adequately covered in education; production cost and manufacturing conditions were the most important factors determining industrial designs in companies. Furthermore designers claimed to utilise technical knowledge to a significant extent in their professional practice despite their limited educational background in those issues. Industrial design practice in Turkey seems to demand designers who are better equipped with a knowledge of materials, manufacturing methods, and production cost analysis, and with computer-supported design skills.

However the issue of the designers' lack of technical knowledge, which appears in the foreground, may have been caused by some background factors. (figure 4):

a) Communication gap between designers and managers:

Managers perceive designers first and foremost as professionals competent in drawing and hand skills, rather than professionals with technical knowledge. Designers on the other hand, identify themselves with problem solving ability and taste and aesthetic sensibility. The significant discrepancy between the designers' self

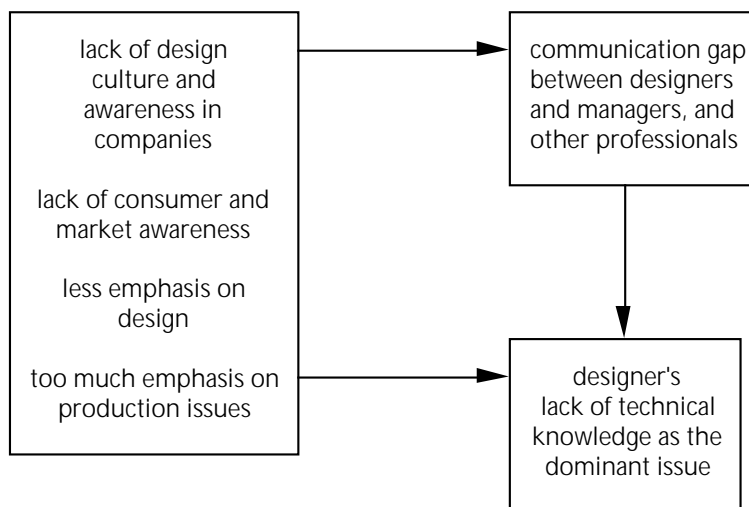


Figure 4 The issues associated with the "lack of technical knowledge"

perception and the managers' views of the designers skills and knowledge suggests a major communication gap between the two groups.

b) lack of design culture and awareness

In contrast to the well-known models of product development cycle, industrial design activity in Turkey receives less feedback from the results of market research, which indicates a lack of design awareness in companies.

Although both designers and managers seem to agree on the nature of industrial design activity in companies as being mainly concerned with aesthetic appeal and functional improvement, the lack of design culture or awareness coupled with the inadequate consumer and market feedback cause design activity to be dominated by the issues of production and cost.

Curricular information on design education in Turkey is limited to a list of courses, and to their short descriptions. Although undergraduate curricula in industrial design departments do include courses on materials and manufacturing processes, these courses cannot possibly cover the specific knowledge required by various sectors; a better strategy for departments would be to encourage an awareness of new technological developments. Although computer-supported design skills was one of the subjects mentioned as inadequately covered in education, industrial design departments

made a considerable effort to integrate computer-aided design skills into their undergraduate curricula in recent years. The effects of this effort should be investigated in the coming few years.

Although all undergraduate curricula include at least one course related to marketing and design management, there is not much evidence that designers are equipped with adequate skills and knowledge as to have an impact on the organisation of design activity and the product development process in their companies. Therefore the contents of these courses should be reviewed in order to understand the reasons behind this discrepancy.

Communication skills should be extended as to cover interdisciplinary, collaborative work skills especially at post graduate levels to enable industrial design candidates to function more effectively in a multi-disciplinary environment.

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