Viewpoint

Design education in Brazil

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The designer – someone who is able to define the characteristics of a certain object – has always existed. There has always been a designer through the centuries, known or anonymous, who shaped objects. Some of these objects are so good that they are still here today practically in their original form – the music stand, axe, stage lights, handsaw, umbrella, for example (Munari, 1982).

The design activity, however, is relatively recent. In Brazil, the first school – ESDI – in Rio de Janeiro was founded in 1962. The area of design in the country has already had some specialist magazines, congresses, monographs, dissertations and theses. However, what were still missing (or insufficient) were the answers to many questions, such as where/how do students find work after graduating? How do they introduce themselves? Are they convinced of their skills? Do they know how to formulate concepts? Are they apt to solve their employers' problems? Are their actions effective? Do they communicate properly? Do they know how to learn, listen and reflect? Do they have enough proper technical know-how?

Traditionally, the disciplines of science teach natural things: what they are like and how they function. And the engineering courses teach artificial things: how to manufacture articles that have some desirable characteristics and their concept.

Engineers are not the only professional designers. "Everyone designs who devises courses of action aimed at changing existing situations into preferred ones. The intellectual activity that produces material artifacts is no different fundamentally from the one that prescribes remedies for a sick patient or the one that devises a new sales plan for a company or a social welfare policy for a state. Design, so construed, is the core of all professional training; it is the principal mark that distinguishes the professions from the sciences. Schools of engineering, as well as schools of architecture, business, education, law, and medicine, are centrally concerned with the process of design" (Simon, 1996).

The objectives of this paper are to inform more about the design activity, to understand the necessary skills of designers, the social requirements that they must fulfil and, consequently, provide them with better education. So this article is organised in five sections. Section 1 addresses industrial design. Section 2 discusses innovation and differentiation and their relation with design. Section 3 presents a survey carried out in Brazil in which some data are highlighted and discussed. Section 4 presents some of the results of the survey. And Section 5 examines these results. Lastly, Section 6 evaluates the results achieved and suggests further developments.

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1 Industrial design

"Design is a creative activity whose aim is to establish the multi-faceted qualities of objects, processes, services and their systems in whole life cycles"; design is the "central factor of innovative humanisation of technologies and the crucial factor of cultural and economic exchange" (ICSID, 2004). It is up to the designer to seek to discover structural, organisational, functional, expressive and economic relationships that enhance cultural, social and global ethics. These relationships involve concern for global sustainability and environmental protection; benefits and freedom for all human beings alike; with cultural diversity, despite globalisation.

Design involves defining and solving problems, analysing, inventing and appraising, guided by great sensitivity concerning the environment, and aesthetic, cultural and functional needs centred on humankind (Owen, 2004).

Both product design and engineering are concerned with planning, development and production of goods. Product designers tend to concentrate on people's requirements and on how to produce safe, user-friendly products comfortably adaptable to the way in which people live; to deal with concept, human factors, appearance and performance, while engineers work with details, functionality, performance and production. Engineers concentrate more on the problems of making a product function better for the tasks it is designed to do and optimise its design for production (Owen, 2004).

Design teachers and professionals are always involved in the question of industrial designer skills. Nevertheless, the quality of new graduate designers is not analysed from the viewpoint of the employers' expectations; there seems in fact to be a gap between what students learn in school and what they are expected to do in practise (Yang et al., 2005). The possible reasons for the absence of relevant skills among the industrial designers could be the following:

- the range and content of the work of industrial designers have been changing over the years, but there is little updated information about placing designers in the job market;
- consequently, industrial design students are not well prepared to be equipped with the knowledge and skills required by the market;
- a conclusion has still to be reached on whether designers should be educated as generalists or specialists; and
- industrial design courses welcome new students with a variety of qualifications, implying that the students' skills, aptitudes and career goals may vary enormously.

1.1 Education

In Brazil, industrial designers can choose to graduate in a variety of skills: fashion design, textile design, graphic design, product design, and so on. As a result of private education, there has been an extraordinary leap in the number of courses: at the start of 2000 there were 54 courses and by 2004, 107 were offered (Dias, 2004). Several possibilities exist of *latu sensu* specialisation courses. There are seven courses on Master in Design and there is one on PhD in Design (MEC, 2005).

1.2 Professional advancement

Industrial designers work in and/or for companies, as employees (internal design) or as consultants (external design). They may earn for their work a salary, monthly fee, by contract, royalties or combinations of them.

2 Innovation and differentiation

Technological innovation is defined by implementing technologically new or substantially upgraded products (goods or services) or processes. The innovation is implemented when the product is launched on the market or when the process is started up by the company (IBGE, 2005).