



## Educational stages of industrial and interior design

Salakhidinov Masuddin  
Sadriddinovich

Masuddin@mail.ru  
+998909421144

Design history and theory. Burnout

### ABSTRACT

Interior renovation process has a complex structure due to its intrinsic conditions, the necessity of different sub-contractors' working together and the high number of components as regards manufacturing. It is extremely important to establish the relationship between cost and design in management of this process correctly. This article discusses about educational stages of industrial and interior design.

### Keywords:

Designs, industrial design, interior design, artistic field, technical activity, infrastructure, educational stages, innovation, projects, appliances

Interior design education is the teaching of the skills and information needed to do an interior design job. Education in this area is offered in different parts of the world. However, admission requirements vary by country and school. There are many ways to qualify for interior design. Interior Design Education teaches people how to draw and plan spaces and covers the latest design software along with other important courses to prepare for work in this area. Education involves reviewing the design outline, the design process from concept to schema development and implementation, and investigating the surrounding philosophies, trends, industry disciplines, and professional skills required for practice. Interior renovation process has a complex structure due to its intrinsic conditions, the necessity of different sub-contractors' working together and the high number of components as regards manufacturing. It is extremely important to establish the relationship between cost and design in management of this process correctly. Different cost estimations are made at different

stages of the process to this end. The experience of the designer is very important for reliable cost estimations. A designer experienced in cost estimation achieves high success in design-cost control estimation and manages the interior renovation process correctly. In this context, the purpose of the study has been determined as proposal of a new interior architecture education model at bachelor's level for increasing student achievement in design-cost control. A literature search has been conducted with an eye to determine what the cost estimation methods used at different stages of the design are at the first stage as methodology in line with this defined purpose and in this context, it has been determined what kind of cost estimations the interior architecture students should make at each and every stage of "Interior Architecture Design Studio" courses. Subsequently, it has been determined which information has to be provided to the students in theoretical courses in order to realize this cost -design relation practice described for project courses. At the final stage, an interior architecture education

model at bachelor's level which integrates theoretical courses covering all of these educational activities with "Interior Architecture Design Studio" courses has been proposed. Industrial design (industrial design, object design, industrial design) is a branch of design, a field of artistic and technical activity, the purpose of which is to determine the formal qualities of industrially produced products, in particular, their structural and functional characteristics. and appearance. Industrial design as an activity includes elements of art, marketing and technology. Industrial design covers a wide range of objects, from household appliances to high-tech, science-intensive products. In the traditional sense, industrial design tasks include prototyping household appliances, manufacturing plants and their interfaces, land and air transportation (including cars, airplanes, trains), and various inventories. Changing over time, cultural reference points and people's needs, industrial design uses the latest advances in technology and materials to "give objects, processes, services, systems a versatile high quality throughout their life" became a tool. A synthesis of artistic design and ergonomics, industrial design performs the following functions:

- **as a step in the production process,**
- **as a scientific activity, constant search for innovations in technologies and materials;**
- **as art because "formal, visual, aesthetic and conceptual elements are the dominant tools for this line of design activity".**

As a scientific activity, industrial design creates functional priorities in engineering, network cooperation, technology transfer and education. Design as art supports social priorities by producing inclusive innovations that serve the public good. Based on the thematic priorities, technological and non-technological innovations are created within the project activities to increase economic efficiency and obtain innovation profitability. Designers who have experimented with household and industrial equipment, manufacturing plants

and vehicles, furniture and appliances, and kitchen utensils sometimes change the structural and functional characteristics of objects beyond recognition. At the same time, the vector is primarily aimed at changing the objective world, and then at people.

The main trend of the modern industrial design industry is to combine all stages of innovative product development and market introduction on the basis of one enterprise. This feature is most clearly manifested in the case of large Chinese manufacturing companies. By following the principle of "Design Thinking", manufacturers can develop, present and release a fundamentally new product on the global market as soon as possible. Such combined companies offer a wide range of services to their clients:

Professional designers determine the value of individual products and services, develop branding strategies, create portfolios of product lines, develop action programs, and project manage new product introductions to production (and sales). In order to better understand the consumer, people's daily life is comprehensively analyzed, cultural development trends are identified, video ethnography is carried out, specific models of using a particular product are developed. In the process of developing innovative products, the architecture and design of the product is determined, 3D models are built, and industrial graphics are developed. In order to understand the importance of design for the heads of industrial enterprises, it is planned to establish specialized consulting organizations. The services of these "project development centers" are partially paid for by the state. Project development can be included in activities that allow enterprises to apply for the status of residents of state-funded technology parks. In order to solve the personnel problem, it is proposed to introduce retraining courses for professors and teachers of higher educational institutions, scholarship and grant programs, as well as to encourage internships of design students abroad. Government support will undoubtedly contribute to the significant growth of the industrial design market. In addition, the price of the services of Russian

designers will be lower than similar projects abroad, which will undoubtedly stimulate demand. In contrast to the broad concept of "design", closely related to "industrial design" are household and industrial goods manufactured in industry. Therefore, any objects created by man cannot belong to the objects of industrial design, only those that are protected by patents and produced in production.

Tasks of modern industrial design:

- **creation of functional and ergonomic objects;**
- **aesthetically pleasing appearance of the product;**
- **increasing the saving of energy and resources in the production and use of products;**
- **design things that are safe for people and the environment;**
- **creating tools that are intuitive to use.**

Combining all these tasks requires an industrial designer to have developed engineering skills, a good imagination and a refined aesthetic taste. In addition, it is necessary to take into account that the finished product must meet the needs of a specific target audience. Before the appearance of the voluminous concept of "design", simplicity was used in speech: everything they liked was called beauty. The development of material culture gave birth to the concept of design, whose roots go back to the beginning of the 19th century. Then came machine production, replacing the manual labor of the elite. Unlike prop designers, prop designers think broadly, diversified. Ideas implemented in practice should look harmonious - it is important to take into account human psychology, ergonomics of the use environment, production technology and material properties, durability (how long the item can be used). The phrase "industrial design" is now on everyone's lips. However, the idea that all this is completely different is that industrial design is the same type of creative activity as ordinary design, but the objects of industrial design are often industrial household products.

Today, manufacturing enterprises have to resort to various tricks in order to cope with the competition and present their products to the consumer market. An interesting and high-quality design of an industrial product is an effective way to stand out from competitors and interest the consumer. The task of industrial design is to determine the external, structural and functional characteristics of objects to which industrial design techniques are directed. Industrial design items include tableware and other kitchen utensils, household and industrial appliances, furniture, appliances, and even high-tech and science-intensive products. Industrial design options include today's popular automotive and transportation designs. Thus, industrial design is not only the art of combining design with technology, but also a marketing tool.

An expert creating an industrial product design should be an artist, designer and technological engineer at the same time. After all, industrial design requires the use of your creative imagination so that the technological meaning of the final product is not violated. An interior designer creates new projects of a harmonious environment to improve human living conditions. He must have creative and artistic abilities, creativity, and a successful interior designer can eventually become the author of projects and create his own design studio. There are various things that teach this direction of design. The profession is suitable for those who are interested in painting, drawing and world artistic culture (see the choice of profession for interest in school subjects). An interior designer creates a unique atmosphere, style, beauty and comfort in a room, realizing the dreams and mood of customers. There are many different styles in interior design, formed in different historical periods: high-tech, neo-Russian, deconstructivism, Romanesque, modernism, etc. The profession of an interior designer includes the entire process of interior design, from room layout, lighting, ventilation systems, acoustics, wall decoration, to furniture arrangement, textile design and installation of navigation signs. Interior design is based on two principles: the functional principle: "what

is functional is beautiful"; the principle of constructivism is the goal of creating a harmonious design as a whole, not in the composition of objects. Design, by definition, is the art of modern artistic design, the development of models for the rational construction of an objective environment. The word "DESIGN" comes from the Italian word "Disegno". Translated into Russian, it has several meanings: idea, plan, intention, goal, drawing, sketch, sketch, draft, pattern, layout, template, scheme, composition. The designer's profession is also ambiguous and multifaceted, and it has several varieties (qualifications): graphic design, industrial design, costume design, environmental design (interior and landscape), automotive design, architectural design. An interior designer is a specialist who creates style, decoration and comfort in the interior. The profession includes accompanying the entire design process: starting from the development of the project and ending with the selection of furniture of the appropriate style. Sometimes the tasks of the designer include the tasks of the boss: he works closely with the builders, is responsible for the timely delivery and quality of materials, the fulfillment of the customer's deadlines and wishes. Drawing allows you to turn an idea into reality. The final result of anything invented depends on the thoroughness of its construction. At this stage, it is necessary to carefully prepare all the sketches and work precisely with all the concepts in this direction. Interior design is not only creating a beautiful image, but also strictly following all the rules of design. Therefore, it is worth understanding the basic concepts used, developing the layout and the final image. Wednesday - includes all surrounding things associated with a person. Basically, the designer is responsible for creating the environment, offering all possible options. Space is the materialization of the environment. It directly depends on the person for whom the project is being developed, his hobbies, moods, life beliefs and other characteristics. This is something that must be entered by the developer.

Composition - The interaction of all interior items and their combination. One of the most

common is the centralized model of composition. That is, a semantic center is selected from the entire interior, which is the main focus. Often, the role of such a center is played by the living room or dining room. An example of this is interior design, a photo in the design perfectly demonstrates the idea of the interior. Even the warmth and hospitality from him is a shock. Proportion - compliance with the size of each element of the interior. The whole concept of harmony is based on the observance of proportional measurements. It should be remembered that each style requires its own dimensions and shapes. This feature can significantly affect the entire created concept, so some styles are not very well combined with small spaces and spoil the whole effect.

To realize the idea, it is necessary to prepare a comprehensive project that reflects and compares aesthetic elements, wishes and technical parameters. Therefore, work on the design project is carried out in several stages:

Forming a design task. At this stage, there is close communication between the customer and the designer, during which all the requirements and tasks are described, as well as how they can be achieved. Create a pre-design option. At this stage, the specialist considers all possible options for reconstruction and presents preliminary sketches. Measurement of buildings. These calculations are necessary for the development of accurate zoning and planning schemes for each plot.

A sketch of the rooms. At this stage, coordination of all the main points, because it is the transition to the beginning of the implementation of tasks. The future layout has clear zones, there are approximate options for placing furniture, and three-dimensional models are created for greater accuracy, which are then confirmed.

Perform all design tasks. This is necessary in order to solve many problems on paper, develop all the nuances and technical solutions, and at the same time save time during repairs. This allows you to try several options for solving certain problems, and only then do not doubt your choice. We plan furniture and

equipment in advance, select materials, make electrical circuits, plumbing and other necessary construction drawings. We also make preliminary calculations of the configuration based on your budget and size.

All that remains is to control the production schedule and timely delivery of materials. In other words, an interior design project is a set of drawings that reflect all your ideas. Wide use of computer technologies requires the designer to have professional knowledge of specialized software. These can be general-purpose graphics packages, for example, 3DSMax, or special application programs designed to perform highly specialized work on the preparation of a design project. So, on behalf of those who want to study the science of interior design, they need at least general computer literacy and a broad knowledge of the use of computers in various fields of activity.

#### INTERIOR DESIGNER - OCCUPATION DESCRIPTION

Interior design includes artistic and industrial design of objects that are completely different in terms of their functional purpose. We have listed only some aspects of the profession of interior designers. In addition to them, many other knowledge and skills can be listed, which refers to the knowledge in the field of design decoration, drawing, characteristics specific to certain areas of interior design, etc. If you feel that you are technically prepared enough, if you combine technical talent and developed aesthetic needs, then your interior design career is right for you.

Interior designers may divide their time between their office and visiting clients' design spaces. They may keep odd hours to meet the needs of their clients and need to be able to communicate well with clients throughout the project. It is also important for interior designers to be creative, detail-oriented, and able to solve problems as they arise with projects. So you're thinking about how to become an interior designer. Perhaps you're a few years into your career and are contemplating making a professional pivot, or maybe you're just starting out—either fresh out of college or just applying to design school. Whatever the circumstances, you're wondering

about your next move. Make the transition well, and you might be able to turn a hobby or interest into a full-fledged interior design career.

A while ago, near our infamous water cooler, one of my colleagues exclaimed, "I'm all in with innovation in construction but what's a room without some beauty, texture and space?" It got me thinking. She was right. A home, without a personal sense of style is well... just a house. Your place must be the right mix of function and style. Whether it's your apartment or your corporate office or your industrial plant, it is important to maintain the atmosphere of your space. This is where interior design process comes into play. Let's try and understand what this is and what different phases lead to excellent interiors. This includes 5 major phases: Our first step when we take up an interior design drafting services project is to inspect the job site and do a walkthrough. Unlike construction, interior design a very personal affair. To get into the shoes of your client, it is imperative that you get to know them.

**Conceptual Development Phase:** During the conceptual development, we try to add functionality to your space. The era of the 90's and 80's property is gone – most properties built during this time have either been renovated or have been brought down to create new structures in their place. The modern client is favoring open spaces – meaning there's going to be several awkward open spaces left for drafting experts to resolve. During the conceptual development phase, spaces are made functional so that they blend in well with the overall style. To facilitate this, new sketches are created which transform the space planning. These drawings are drawn to scale and sent for you to approve. Once you approve the spacing, most of the heavy lifting is done!

**Design Development Phase:** You see, once you approve the design, we're all set to let our creative juices flow. The design development phase is all about adding details to your design. Everything that we select, right from finishes to flooring, tile, wooden pieces are in sync with the design theme you approved. And these are illustrated via new proposed floor

plans, detailed drawings, wall elevations and other visual aids.

Construction Documentation Phase: Once you approve the design, we begin working on construction drawings set. These documents are essential for various contractors which will follow our lead, including but not limited to carpenters, plumbers, tile-setters, electricians etc. Interior construction documentation sets will give them everything they need to execute the design flawlessly. Construction documents also help while obtaining construction permits from the city municipality. Depending on the size of your project, you might need to submit site plans which show scope, elevations and material schedules. Our construction drawings services are the best in the industry. In the case of an industrial design project, the interior design designer must know the organization of work, study the characteristics of a specific production, so that the interior solution he offers should be the most optimal from the point of view of the working conditions of the employees. In addition, both industrial and artistic design decisions must take into account many purely technical aspects of the decorated room. The designer must be aware of the characteristics of communication, electrical conductors, heating systems, etc. This requires the presence of sufficiently developed spatial thinking and general technical literacy.

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