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# Perspectives and Innovations in the Teaching System at the Faculty of Material Technologies and Textile Design, Lodz University of Technology – a Concept of Combining the Education of Artists and Engineers

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## Abstract

*Design methodology makes it possible to plan and organise many different processes to obtain an optimal object. Students taught at the Textile Architecture specialization gain skills in design and technology, and this combination facilitates them to cooperate with industry. Recruitment expectations of companies reveal innovative fields of activity in this area. A new subject – design methodology for corporations becomes a link in the process of teaching which will prepare graduates well for work in the clothing industry. The article shows a path of education of students at the Faculty of Material Technologies and Textile Design extended with the elements of artistic education. It takes up the broad topic of education in clothing design by discussing subsequent stages of education. It discusses a new subject, i.e. designing for corporations, which allows for a combination of artistic and technological skills. Finally it indicates potential pathways to multidisciplinary education.*

**Key words:** textiles, design, education, industrial design, corporate design methodology.

In 1992 the Textile Faculty, Lodz University of Technology, [1] started an innovative process of merging the elements of artistic and technical education which had already resulted in successive generations of graduates [2]. Due to the visionary and multidiscipline system, today the faculty also teaches fashion designers. Currently the program of studies continues to develop and adapts primarily to

market realities and expectations of both employers and students.

Responding to this demand, faculty authorities extend the range of teaching, understand the need for close cooperation of students with representatives of the textile industry and fashion, introduce new teaching methods and broaden the range of knowledge and skills. The de-

sign course, offering among other specializations in the architecture of fashion, educates fashion designers.

Within the scope of the course, much time is devoted to developing aesthetic sensibility and design skills combined with technological know-how necessary for a graduate to freely operate in the textile industry and fashion. Presently both the method of education and research directions are focused on cooperation with industry and commercial use of the results of researches. The opportunity of practical application of the knowledge acquired is the biggest asset of graduates. Very important in the education of fashion designers at the universities of technology is the combination of technical and artistic aspects, which gives unique skills and distinguishes graduates from those educated in art schools.

It should be noted that in fashion designing there are two systems, one with a dominating artistic expression, which creates unique designs, and the other one with science and technology prevailing, which leads to clothing design for mass production. A very important element is the introduction of additional classes – designing for corporations, whose aim is to prepare future graduates for work in clothing corporations. However, before students reach the level at which they can freely prepare commercial designs, they must take subsequent steps of education

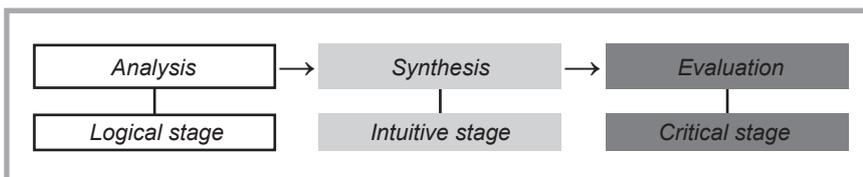


Figure 1. General system to apply in various types of designing.

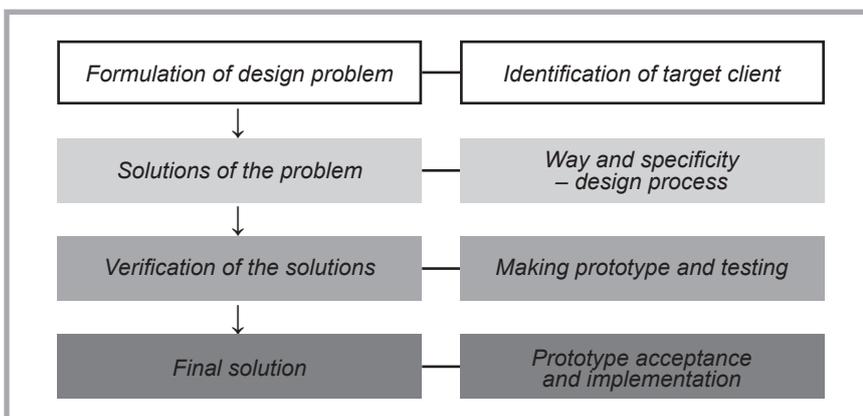


Figure 2. Scheme of designing stages as a system of a solution to a specific problem.

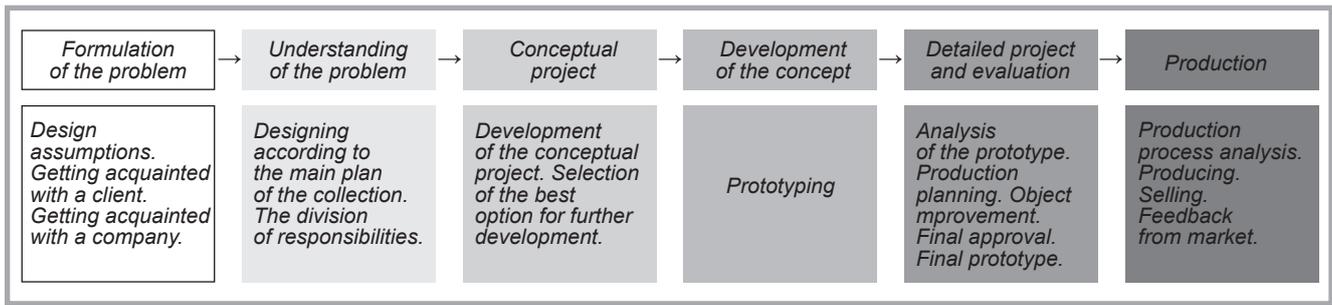


Figure 3. Stages of design process, after K. Best [4].

in the clothing system. Such a system approach to education ensures gradual acquisition of extended skills.

When discussing the stages of designing, we should begin with the concept itself and then its development.

Designing as a creative process accompanies people from the very beginning. Initially, acquiring food or constructing tools was superior to other needs, but with time an equally important element became getting clothes to protect man against external factors and regulate body comfort. Even in such a basic approach to clothing, a certain process appears whose result is to obtain an optimal object. Naturally at the primary stage man was not aware of the process of creation, but wanting to produce a better object, he involuntarily improved the previous one, analysing its drawbacks and advantages. This can be considered as the simplest scheme of action referring to every man and every object being created.

One way of thinking remains constant and always includes three phases: analysis, synthesis and evaluation [3]. Often, when the object does not meet our expectations, in the moment of evaluation we return to the analysis and the whole process in repeated (Figure 1).

It is important to maintain the methodology developed in the field of designing a new product and to take into account all aspects of this complex process. Creation as a solution to a certain design problem should be divided into stages (Figure 2).

Industrial design, which also includes clothing design, functions according to a similar pattern, irrespective of the topic. Such a system is also used in the methodology of corporate design and, depending on the company, it also appears in a more extended form (Figure 3).

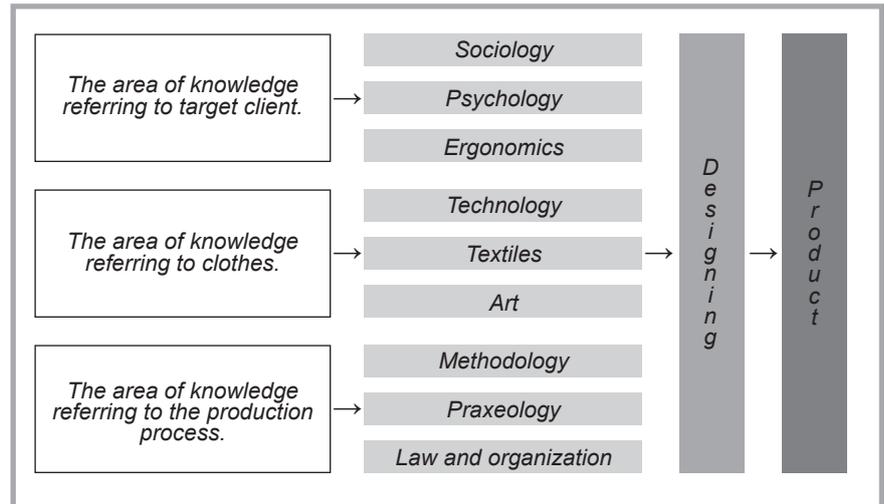


Figure 4. Range of knowledge necessary for the design of clothes, after D. Miller [3].

Corporate design as a complex process requires consideration of many input data such as the user, price or construction. In design processes we use broad knowledge with the diverse significance of its individual components. Assuming that we deal with clothing design, we should take into consideration the knowledge of specific areas. Simultaneous education in that field results in the better preparation of students for professional designing (Figure 4).

Important is parallel and balanced training of not only technological but also artistic skills. The scheme presented in Figure 5 shows the training of a fashion designer, subsequent stages of gaining skills and levels reached in this process. The system also includes part of designing uniforms, protective clothes, clothes with a targeted price or inspired by history or phenomena.

After finishing the education process in which students have become acquainted with the principles of product formation, including balanced relations between science, technology and the arts, they have the skills which allow them to undertake work and to further develop.

As one of the final stages of education, classes in corporate design aim at special preparation of students to work in the modern fashion industry. The formation of an optimal product will depend on students' skills.

The concept of the course is an innovative combination of science and industry [5] which includes, e.g. classes conducted at cooperating companies and training that is awarded to select students who have completed the course. The best designs are also awarded with implementation in production. This experience opens perspectives for further cooperation of scientific centres and companies.

Due to the advanced level, these classes are conducted in the last semester of MA (Master of Arts) studies. At this stage a future designer has already passed a number of classes in designing and is equipped with the knowledge which allows him to design consciously with regard to multiple data.

The aim of the course is to learn the methodology of corporate design and to develop design skills essential for cloth-

Pos.	Stages	Aspect of realization	Aspect of art	Aspect of technology	Aspect of designing	Aspect of sociology and psychology
1	Basics of design	Any technique of making a process	General artistic education, painting, drawing, sculpture, composition.	Taking anatomy into account.	Attempt at modifying the proportions of the human body with the use of illusion, flat silhouette.	Gender
2	Basics of design	Any technique of making a process	General artistic education focused on composition.	Take into account the anatomy and movement. Mould formation according to material characteristics.	Overcoat designed from geometrical figures, 3D silhouette.	Gender, utility process.
3	Basics of design	Awareness of the basics of manufacturing technology	General artistic education, observation of the environment and creative interpretation of form inspired by the environment.	Taking into account the anatomy, ergonomics, construction and manufacturing.	Human relation with the environment, inspiration and integration.	Gender, utility process and general knowledge of fashion trends.
4	Basics of design	Awareness of the basics of manufacturing technology	General artistic education, painting, drawing, sculpture, graphics, composition.	Taking into account the anatomy, ergonomics, construction and type of clothes.	Designing forms of clothes according to body silhouette, type of clothes. Choosing one element of clothes e.g. Collar, cuff etc.	Gender, utility process and knowledge of a the chosen fashion trend.
5	Basics of design	Awareness of the basics of manufacturing technology	General artistic education, painting, drawing, sculpture, graphics, composition.	Taking into account the anatomy, ergonomics, construction and type of clothes.	Designing inspired by one historical style in fashion.	Gender, social identification of the final user, designing process, knowledge of the chosen fashion trend.
6	Proper design	Awareness of industrial manufacturing technology.	General artistic education, painting, drawing, sculpture, graphics, composition.	Taking into account the anatomy, ergonomics, construction, manufacturing and features of applied fabric.	Designing according to applied fabric. Fabric determines decision in designing.	Gender, social identification of the final user, designing process, knowledge of the chosen fashion trend.
7	Proper design	Awareness of industrial manufacturing technology.	General artistic education, painting, drawing, sculpture, graphics, composition.	Taking into account the anatomy, ergonomics, construction, producing possibilities, type of clothes, functionality, producer's profits.	Designing according to changeable fabric in a construction of clothes.	Gender, social identification of the final user, designing process, knowledge of the chosen fashion trend.
8	Proper design	Awareness of industrial manufacturing technology.	General artistic education, painting, drawing, sculpture, graphics, composition.	Taking into account the anatomy, ergonomics, construction and type of clothes. Possibility of prefabrication of the elements of clothes and process automation.	Designing according to a chosen element. Choice of this element determines the whole design and the design also determines the type of element.	Gender, social identification of the final user, designing process, knowledge of the chosen fashion trend.
9	Corporate design	Awareness of industrial manufacturing technology.	General artistic education, painting, drawing, sculpture, graphics, composition.	Taking into account the possibility of production, price of the product, functionality and construction.	Designing according to the company's policy for a target customer. Designing very big sets that can be mixed and matched.	Knowledge of the target customer's needs and company's profile. Extensive knowledge of the chosen fashion trend.

Figure 5. Scheme of educational level of fashion designer, after A. Nawrot.

ing companies. After finishing the course students are able to:

- recognize the needs of a target group,
- analyze and select trends in view of a specific recipient-consumer,
- design according to a company's development strategy and expectations of the target customer,
- design according to specific rules with respect to clothing variety and sale,
- develop and use clear design and production documentation in English,
- prepare a prototype of an optimal

product for further verification of the model,

- implement of a product in mass production.

In order to attain the skills above, subsequent introductory lectures and classes are conducted at the university and in selected companies. Part of the course is conducted by the employees of cooperating companies. Students benefit from the knowledge of professionals and get acquainted with the real requirements of modern clothing corporations.

Currently two full series of classes have been conducted in which students are divided into groups collaborating with Monnari [6] and Top Secret [7]. It was assumed that part of the classes were held in design departments of the companies and part at the university. Students could learn the way in which companies operate and participate in their current design cycle as well as verify their skills in real design problems. As assumed, the introductory lectures were conducted at subsequent stages of work and students' proposals were corrected. During the course,

students went through a full cycle of design which reflected work in a clothing company, starting with the plan of a collection for the creation of a prototype.

Representatives of the above-mentioned brands evaluated the cooperation as very beneficial for both parties. First of all, beneficiaries of the project are students who gain experience. On the other hand, companies can observe a large group of potential employees and thus propose training to candidates best matching the profile of a sought employee. This approach shortens the recruitment procedure and optimises its cost.

Students who have completed the course considered the following as the greatest benefits:

- the possibility of practising and testing their skills in professional design groups,
- verification of their own skills as designers outside the university,
- a detailed look at the working system in a clothing corporation,
- widening of design skills,
- ability to analyse trends in terms of target customers using professional tools – WGSN [8] and catalogues,
- greater awareness of the relationship between construction, production and price,
- ability to design consistent stylistic groups according to guidelines indicated by the brand, e.g. concerning the date of entrance of the collection to the market and customer's profile.

After each cycle students got credits upon presenting the results of their work in the form of clothes made according to their own design documentation. Each student had to discuss the whole cycle of their work and make a presentation before the representatives of the company and TUL (Lodz University of Technology) like during a job interview.

Besides marks, as a special award students got paid training in the companies and the opportunity to realise their projects in mass production – a regular collection of the brand (*Figure 6*).

Summarising the experience gained so far, we should consider the introduction of additional classes in the recruitment process and provide students with access to professional websites analysing global trends of fashion [8].



*Figure 6. Design and production model of a dress. Author Malgorzata Seta.*

The concept of stages in the education of designers presented could be extended with further problems that have emerged in the offer of European universities, e.g. education in the management of clothing brands in Polimoda-Florence [9].

The cooperation of engineers with industry was discussed in terms of organisational skills many years ago but it is still a pressing issue of the developing market [10].

At present, companies seek specialists in control of selected design processes, product managers or department and brand managers. Analysis of the clothing industry shows that we still need specialists-designers with unique technological and artistic knowledge or constructors-technologists. So far, these people have been recruited from among managers already working in the departments and those of narrower specialisations. Therefore in the process of higher education or postgraduate education, we should consider the introduction of an additional specialisation for those who wish to combine the knowledge and skills of management, designing, textile engineering and sociology. Such a graduate would respond to the expectations of an innovative clothing industry and assume in the future the position of a Fashion Product Manager, Fashion Art Director or Luxury Brands Director.

Summing up the analysis of education above, expectations of the market and the description of the education system, which is a combination of long-term activities of educators of the Academy of Fine Arts in Lodz and the Lodz University of Technology, the significance of com-

binning artistic and engineering education has been proved. It is important that the combination of these two elements be aimed at educating young people in terms of labour market expectations and be in line with the principles of these two areas. The high interest of clothing companies in professionals with the practical skills of an engineer and artist points to the further development of simultaneous and multidisciplinary teaching in continuous contact with industry. The analysis above may be a source of inspiration in setting new directions, connections and inspirations in education systems.

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