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THE SHARE OF DIGITAL AND CLASSICAL IN THE BASICS OF DESIGN

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The digitization of full-time education requires not only a re-evaluation of traditional software (communication) and hardware (technical) equipment, but above all a change in the philosophy of approach to teaching (communication) with respect to the current student with his / her capabilities, digital skills, computer and electronic equipment, changed way of thinking and personal communication. Current teaching also reflects the paradigm of the consumer-teacher relationship between the teacher and the student. The paper responds to these facts with a comprehensive methodological approach in the studio subject of design basics.

Key words: digital, design, education, methodology

INTRODUCTION

We live in a time of growing complexity and "intelligence" of products, revolutionary, technical and technological improvement not only of high-tech production technologies and everyday objects, but also of changes in communication schemes, especially centuries-old "personality" education methodology. For hundreds of years, a human being equally physiologically and psychologically equipped is rolled by electronic computer intelligent systems, integrated in all possible areas of life and work. Systems of digitization of education are gradually taking on a massive dimension of application. The production of intelligent electronic devices (smartphones) and the constant increase in their use necessitate new patterns of perception and communication of natural, technical and artistic knowledge and experience of man as well as ways of communicating with them, which indirectly requires changes in the approach to design design teaching.

PURPOSE

These changes, including the digitization of full-time education, require not only a reassessment of traditional software (communication) and hardware (technical) equipment, but above all a change in the philosophy of learning to communicate with the current student with his or her capabilities, digital skills, computer and electronic equipment as well as a changed way of thinking and personal communication. Current teaching also reflects the paradigm of the consumer-teacher relationship between the teacher and the student.

RESULTS AND DISCUSSION

Design

A good design is good if it is good as a finished design. If it is not done, no one needs it. And nothing is worse than a design that no one needs. On the basis of design, we practice to prevent it from happening. At every step from finding ideas to presenting ideas, we fully exploit the potential of students (mastering digital skills). Every day new knowledge (social networks, internet, technical and technological information on blogs, You-tube, social networks ...), new opinion search (blogs), every day drawings (3D modeling, 2D sketchbook). Every week fresh briefing, every week new reflections, every week a compelling video presentation. To get the best results quickly, not to cross, to rely solely on SEBA ..., and all that comes to mind. Exertion and fun.

The ideal division of the consultation is: Wednesday briefing weekly tasks, Friday presentation of weekly work. During the 13 weeks of the semester, the student completes and absorbs the basics of design work in the range of:

• research and reasoning on why the customer wants a new product, while the student uses his or her own and mediated surveys, in particular in the form of metadata, web questionnaires and blogs.

• After accepting the topic object, the student discusses the technical principle of the functioning of an existing similar product, the patterns of use and suggests an economically acceptable price level (social aspects).

• Creates sketches in the fluctuation phase to generate original ideas in an optimal number of 30 concepts.

• After a video conference face-to-face consultation with the team and the teacher, he will create a consolidated concept in various variants of the “heavy to toy” shape based on the presentation.

• After a video conference consultation with the team and the lecturer on the basis of the presentation will create a technical elaboration of the selected variant and propose technological principles of industrial production and a specific precise procedure for the production of the dummy or prototype.

• Production of a dummy or prototype.

• Design and realization of the presentation of the design object, (instructions for use, adjustment, packaging, display, poster ..

• Evaluation and comparison of results achieved with the team and the market level of similar products.

Historical and current market research and design analysis

On the Internet, but also in analog media, the student evaluates historical (vertical) and existing / horizontal) generally accessible information from a potential consumer, manufacturer and designer ... all in areas such as: market, retailer, customer, technology, materials, trends and paradigms.

The results of the analyzes are:

• Understanding user requirements, habits and expectations. Formulating potential design ideas in contextual observation and using techniques: interview, questionnaire and behavioral simulation.

• Understanding of lifestyle - market - technological trends by analysis of professional information sources and their contexts presented as a video presentation.

• Development of similar products from their inception to present complex structure of similar products on the current market presented as a video presentation.

Introducing 30 design concepts

The philosophy of concepts is to express a specific or at least narrative aspect in the design of a design, such as: maximum security, economic, marketing, ecological, logical, emotional, entertaining context .... :

• SCIENCE - LOGIC

• ART - AESTHETICS

• POLICY - ETHICS

It is important for the designer that, besides the useful ones, his things are especially beautiful, eg. in terms of Kant's definitions beautiful in his work "Criticism of Judgment" where he talks about 4 beautiful definitions:

• Beautiful is what you like without arousing interest.

• Beautiful is what everyone likes without concept.

• Beauty is a form of purposefulness of an object, as long as it is perceived in it without an idea of purpose.

• Beautiful is what is recognized without being conceived as an object of inner enjoyment.

From the psychological point of view, we support three characteristics characterizing the student's creative process:

• originality.

• Flexibility.

• elaboration.

During the consultations it is not necessary to startle the student, but to motivate him / her to think about it, to help him / her to determine the principle of functioning, main function, auxiliary functions and ways of securing them. 1, ideas to evaluate and try to formulate a concrete main idea of the solution (philosophy - what I want to say, convey, emphasize, eg: consistency, harmony, well-being, contrast, philosophy, ergonomics, modularity, universality, unpretentiousness, logic, clarity, technology) , technical solutions, materials, perfection, modernity, ecology, social status, function ... or even joy, dignity, prestige, modesty, ... or speed, lightness, airiness, stability, ... or something other than dignity, reliability, precision, accuracy, femininity, trust, well-being, safety, ...) and then the student already needs the solved subject - to sketch, analyze, think, technically solve and present the problem from this aspect.

Design is experimenting with the context (what the product wants to say indirectly) and the sensation it creates in the perceiver. For students,

sensitivity is built as a central concept, such as life philosophy, sensitivity to problem, sensitivity to people, nature and surroundings, sensitivity to shape, color, ... E.g. Ecology is not only in the smokestacks, but above all about the sensitivity of each person to nature and the preservation of life separately and all together. Sensitivity as the ability to conceive the composition, to understand the loaded, to understand the sketched. The inspiration for design is in various areas not only of art, but also in philosophy, history, nature (bionics), natural and technical sciences (high-tech) and especially in man. Design is like a recipe, sometimes more art, sometimes more function or science, but the most important is the benefit, idea, idea, message that the designer communicates to a group of people in an aesthetically appropriate and environmentally friendly way. Finding inspiration and stimuli through the world-wide Internet network plays a vital role here.

It is extremely important to be able to present your idea in a clean, simple and illustrative way. A successful presentation is usually more important and convinces more than a brilliant idea.

The design is also about the formal side. The presentation area is one of the most traditionally developing areas of design digitization. In this phase of teaching, we can evaluate primarily the originality and flexibility of students. Formal aspects of students' ability to present and communicate their thoughts and ideas are also mapped in the development of concepts. The sketches produced as digitized, or ultimately scanned, edited and digitized for the needs of a video conference presentation in consultation, document both the craft and digital skills of the students. For their equalization are used various types of commercial and open source sketching, drawing, modeling, visualization and animation programs.

Consolidated concept

At the stage of the consolidated project, the student demonstrates the ability to think unconventionally, creatively and independently and to show how he / she can express, transmit, convey, present his / her ideas to the environment (manufacturer, customer, public).

In the proposals, the student needs to document the ability to express perfection, illusion and loyalty, responsibility, rightness, clarity, timelessness of his chosen design alternative.

The mission of design at this stage is to seek the consistency of shapes, forms, colors and product graphics with the function and anthropological (dimensional) and psychological characteristics of man by creatively finding principally new solutions and their combinations to improve existing functions or formulate new functions not yet known.

Design as an art discipline mainly deals with compositional components and thus determines the shape, color, texture, structure and invoice of the product and their mutual consistency.

Creating design as an artistic composition is working with the basic elements of the composition: points, lines, surfaces and space, relations between them and relations to the environment, their basic characteristics and psychological influence must be known by the designer. These

relationships then determine calm and tension, dynamics and stability, meter, rhythm, scale and size (colossal), contrast and nuances, symmetry and asymmetry, module, segmentation, dominance and accent, harmony and proportions of the final design. By means of these means, the designer, like the composer, in his work achieves the expression of his own feelings as a reflection in the feelings of the sensitive perceiver of his design.

Since the work of a designer is often the work of the inventor, some criteria for making a positive decision on the fulfillment of the condition of inventive activity - which the invention is:

The invention consists in applying a known solution in a non-trivial manner, e.g. a known working method used for another purpose where it produces a surprising effect

• the invention overcomes technical prejudice by departing from a trend which has hitherto indicated the state of the art in the art

• The invention solves a technical problem that experts have long tried to solve and satisfies a long felt need

The invention is based on a series of visibly easy steps consisting of known measures. If the average practitioner is able to use only two or three steps of the process, a solution exceeding this number is the result of the inventive activity

Negative criteria leading to the conclusion of a lack of inventive activity - which the invention is not:

Simple extrapolation based on the prior art without surprising effect,

• consists of a simple selection of several equivalent known alternatives,

It consists of known features arranged side by side without a surprising technical effect and without a single common inventive idea.

Formally, the student's ability to create virtual 3D models and then process them into photo-realistic visualization or animation is extremely helpful at this stage.

Technical development

The preparedness of students in the field of technical elaboration is fundamentally individual and depends on the type and level of secondary school and therefore it is more about results, motivation and mutual collective but also individual education of students in technical design (materials, technology and design).

Formally, even at this stage, the student's ability to create and visualize virtual 3D models in any modeling program (Blender, Rhinoceros, Sketch-up ...) with subsequent 3D printing is helpful. However, more demanding CAD, CAM or ergonomic analysis programs are also beneficial. Of course, knowledge of these digital skills is extremely rare at this stage of education. Digital design preparation for rapid prototyping is becoming increasingly important and more common, helping to verify technical detail. In this area we mainly use 3D printing, laser cutting and CNC milling in specific materials.

Presentation

The presentation of the created works is diverse and gradual. It ranges from sketches (pencil, ink, crayons, mixed techniques, drawing with a marker, pastel, digital sketches ...), technical drawings, through an illustrative or functional working model (from cardboard, balsa, wood, polystyrene, foamed materials, etc.) to virtual model: rendering, animation and presentation functional model or prototype (made of materials identical or optically identical to the real final material of the product.

It is appropriate for students to present in their presentation a certain spectrum of designs and basic philosophy by descriptive sketches, so-called. documentation and then create a spatial model of material that most accurately depicts the entire design or individual aspects of the design. Even at this stage, it is extremely useful to use technologies such as 3D printing, laser cutting and CNC milling.

Color solutions or other variants of the layout should be accompanied by a realistic photo presentation on the posters. It is good if all forms of presentation of the proposal have some guiding uniform characteristic feature (see compositional components), which optically integrates them into one whole (to realize what this belongs to).

The student should present the product, if possible, also in the instruction manual, in a sign and symbolic visual representation, in the context of explaining its utility-functional characteristics to the consumer.

Overall, the student in the field of presentation is responsible for:

- Presentation, visualized and exposed subject
- The quality of presentation of posters and design models
- Accuracy and clarity of content
- Feasibility of the presentation in terms of procedures and costs
- Ecological concept

Evaluation and comparison of results

It is important that the student feels the importance of the efficiency of the effort to achieve results in design design. We provide such feedback in three ways:

- assessment of the student at the end of the semester in the framework of the public presentation of the semester work before the commission and the result marking,
- self-assessment with the possibility of confrontation with the teacher based on the scoreboard
- comparative assessment by the team, when each student compiles the order of their colleagues' work and the teacher then summarizes these assessments and presents them with commentary.

The achieved quality of semestral works is evaluated according to the following criteria:

- Design - innovation, aesthetics, clarity, ergonomics.
- Technology - usability and functionality.
- User quality - user benefit.

One has to be the starting point and the aim of the basic idea of the product and therefore other professional aspects are evaluated:

- a thorough analysis of assumptions,
- social and social acceptance of the main idea,
- Content clarity
- feasibility in terms of procedures and costs;
- ecological concept,
- Quality of presentation and design models.

The evaluation is based on interdisciplinary evaluation of different areas using system analysis methodologies such as pairwise comparisons, morphological methods, pragmatic differential and criterion evaluation through value analysis.

a. Topic specification, problem recognition,
- defining the problem:
- severity of the problem, complexity of the problem
- quality of problem analysis, recognition of problem dynamics
- completeness of the problem recognition
- formulation of the problem.

b. Draft concepts:
- content and content structure
- the innovative level of the concept
- the coherence of the concept
- the completeness of the solution in relation to the complexity of the problem
- consideration of contexts

c. Concept enforcement:
- context: content / form of solution, semantics of the proposal
- innovativeness of the proposal
- visual impression, peculiarity of action
- shape coherence, product architecture
- color solutions, textures, typography
- ergonomics, ecology, humanity, clarity, accessibility.

d. Realization and presentation:
- functional principle
- choice of materials and technologies
- functional and moral durability
- model
- the panels submitted
- presentation and choice of means of communication

CONCLUSIONS

The outline of the possible influence of the pedagogue in the subject of design basics on the student is an extensive and multidisciplinary area. It is neither easy nor clear to move around. Not only from the point of view of design theory, but also in my opinion, there is a wide range of possibilities for the student to be influenced and motivated in this subject, especially if we

do not confine ourselves to strict rational laws, criteria and perception in one sense; shape, color, but let us consider functionally unbound philosophical, psychological, narrative reflections on a complex of product properties (shape, texture, structure, color, context, surroundings, ... in relation, ... in relation to the consumer). In such a wide diapazon of possible content and forms, the era of computerization provides a wide repertoire of digital capabilities that must suitably match the craftsmanship and student needs in accordance with the requirements of the "Fundamentals of Design" syllabus.

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