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Design Thinking. How to Understand It?

Branislav Jelenčík*

Slovak University of Technology in Bratislava Bratislava, Slovak republic

***Corresponding author:** Branislav Jelenčík, Slovak University of Technology in Bratislava Bratislava, Slovak republic.

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Abstract

The concept of Design thinking – the process of creating a successful product for specific markets is popular today and used by managers in practice. However, we first ask ourselves the question: "What is thinking? What is design thinking when designing product shapes, not purely from the perspective of product management?". Is it a specific cognitive activity, or the aforementioned chronologically arranged analytical and testing steps in product development, as the M.I.T. concept of Design thinking talks about? The unique thinking of a student – a future designer is influenced by many factors. The content of the article wants to draw attention to what primarily influences thinking, what is the output of the author's thinking and what impact it has on the designed product. By understanding the essence, the teacher helps the student to strengthen personal positives.

Keywords: Design Thinking, Creative Process, Product Design, Empathizing, Cognitive Activity, Design Education, Innovation, User-Centered Design

Introduction

For the last few years, the term Design thinking has been repeatedly used on internet portals, TED conferences, as well as in academic environments and professional discussions. Let's clarify! We intend to discuss exclusively about design - designing the optimal form(s) of utilitarian objects for repeated production (hereafter referred to as Design forms). Not decorative objects, or objects with marginal utilitarian function, or objects presented more by a sales strategy than by their actual usefulness.

The article is exclusively about the Design thinking of product designers of shapes. The World Design Organization offers an expanded definition. The Skillmea blog states, Design Thinking is both an ideology and a process that is concerned with solving complex problems in a way that is primarily user-cantered [1].

Despite the informality of the source, we find this definition to be simple, clear, and quite concise. Her last words are likely to elicit hearty applause from the audience after talks by brilliant women and men at TED conferences. Design thinking - to paraphrase - is the philosopher's stone - a chronological process of 5 steps: Empathize / Define / Ideate / Prototype / Test [2]. Unquestionably leading to success also in design form. (By the way, many teachers project a TED conference recording to students instead of their own interpretation). Lest the layman think that the above procedure makes problem solving quite carefree and that the designer therefore does not deserve a high fee, iteration can occur between steps. Expectations tied to comfortably achieving an amazing result can get complicated under certain circumstances.

Is Thinking Just a Process or a Cognitive Activity?

The introduction should be short and motivating. We would like to state: "That's it! Everything is solved." Designers of all countries, rejoice! Anything, including Design forms can be handled with ease thanks to Design thinking. We are concerned about the question: "What is the true mindset of a designer? Is it a unique and personalized, cognitive activity, or is it a method, a process, or a literally remembered ideology leading to expected and planned results? In an academic setting, critical thinking is useful. Finally, there is the notion of empathizing, which in our opinion deserves equal attention in the context of user-orientation.

It will be useful to clarify the concepts. We will rely on peer-reviewed, internationally recognised explanatory dictionaries. Thinking is described as: „ ... the action of using one's mind to produce thoughts [3]. Thoughts would also like to add the meaning of judgments. Alternatively: „ ... the activity of using your mind to consider something [4]. or „ ...is the activity of using your brain by considering a problem or possibility or creating an idea [5]. Someone has or people in general have a particular idea or belief, or particular reasons for thinking something [6]. Or else? „... the activity of using your mind to consider something: or ...is the activity of using your brain by considering a problem or possibility or creating an idea [7].

The Creative Person's Thinking Influences Many Inputs

Thinking, its quality and the algorithms created, is closely related to the psyche, competencies, history... of the individual. It reflects even at a particular time physical health and fitness, fatigue, motivations, defiance, infatuation... It is an image of personal uniqueness. Our thinking integrates social experience, our own value system, educational orientation, practice, and experience. Even the associations we have acquired, for example, from the oral histories of loved ones, or the irrational phobias of childhood, when parents played cards at the neighbours in the evening and the cots were dark. Our complexes about something are also an inscrutable companion in the meanders of thought. They can hinder, but also accelerate, motivating us to change. Some specific personal competencies (dysfunctions, introversion, taste, physical resistance to something...) we even have to fight in life. To change our perspective on a problem (political, social, economic). Broaden perception, pre-understanding (knowledge of science...).

How we create our personal competencies for thinking, or are mixed by the external environment (family, school, workplace...), limits its uniqueness, algorithms for decision-making, potential for depth of analysis, capacity for empathy, situational awareness. Although we are strangers to any kind of discrimination, we have to acknowledge that highly creative individuals, people with extreme IQ or EQ, can have an edge in thinking efficiency under favorable circumstances. For example, they obtain information or approval from others more successfully. A diagram of the inputs to the designer's thinking and the influenced outputs is shown in Fig. 1.

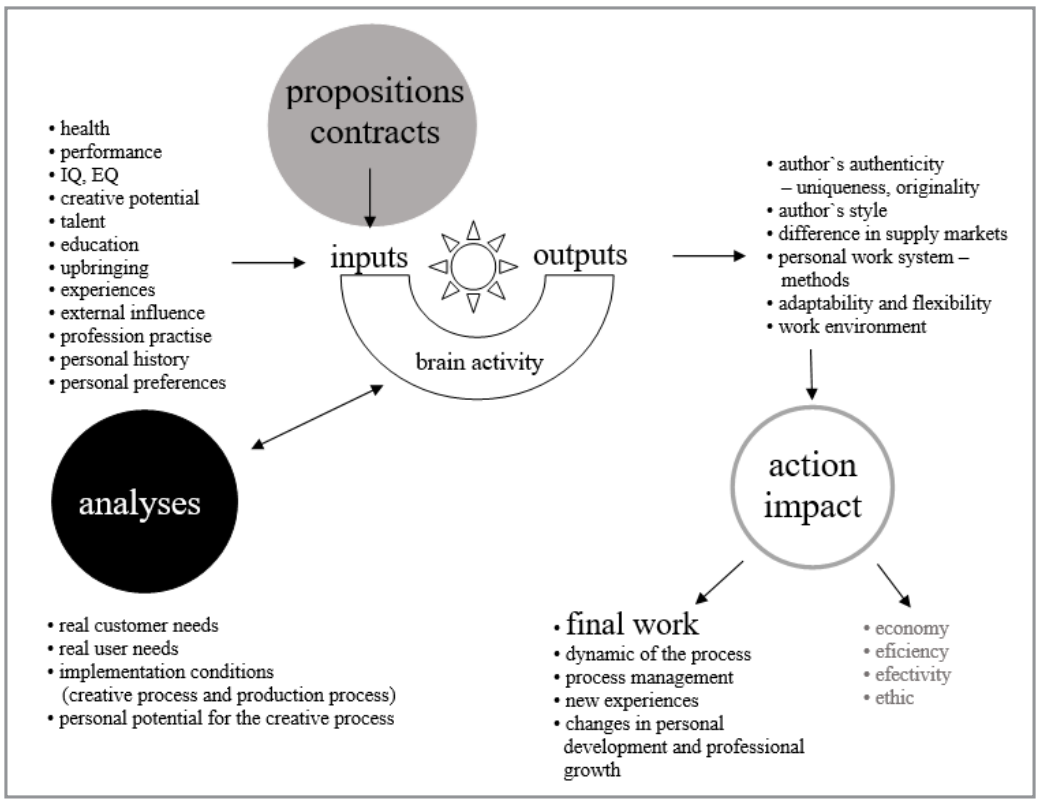

Figure 1: Design thinking – another model (Branislav Jelenčík)

Therefore, different designers, working in isolation, will bring a variety of proposals to a tender with a single brief. Not one identical one. Creative thinking is controlled by the solver's internal selection criteria and culminates in the solution's conformance to the criteria [8]. Personal competencies - prerequisites for unique thinking shape the form and quality of internal selection criteria. A car designer who has experienced a car crash perceives the value of protecting life and limb more strongly in design than a colleague who has not yet had an unpleasant experience. He subconsciously designs with a heightened attention to safety and implements measures influenced by experience, not just regulations, into the design.

The internal selection criteria may not be identical to the demands of the propositions for the creation of the new work - product. The designer may be more critical, more demanding in

his thinking during the creation process. He can even determine the additional content of the propositions given by the external environment (tenderer, competition, investor, design client). However, there is also the opposite - benevolence, downplaying of the propositions. In the same way, proposers do not always necessarily prepare high-quality criteria. To the designer, they therefore seem inadequate, imprecise, or easy to meet.

We mentioned at the outset, and it is evident from the chronology of the steps and the iterative potential, that Design thinking (TED conferences) presented to those interested (students) in Design forms is a process, a progression from task to goal.

How do peer-reviewed, internationally recognized explanatory dictionaries define the process?
For example: „ ... and series of actions that you take in order to achieve a result [9]. Or: „ ... is a series of actions which are carried out in order to achieve a particular result [10]. Alternatively: „... a serie of actions that have a particular reason [11].

The procedure, a process with iterations should generally lead to the desired result efficiently. That is the point of the process and the resulting method. Wherever and whenever we repeat the process, we should arrive at similar results. The discovery of a design process that produces an ingenious solution every time would literally catapult the profession into the centre of socio-economic concerns. So far, it has not! Conversations with designers in practice have long suggested that remarkable ideas (the coveted, almost genius ones) have taken their definitive form and functionality without any known process. They were designed intuitively, spontaneously. Even during an interrupted sleep. A notebook by the bed, a brief lamp light, a few sketches. Although the „nocturnal idea "was subjected to critical analysis in the days that followed, the counter-arguments proved weak, irrelevant. Intuition, the specific creativity of the individual „hit the target "the first time. Even the suddenly enlightened Archimedes reportedly jumped out of the bathtub with the famous cry of heureka! Designers, usually above-average creative individuals, consciously ignore an exact process when working, or do not identify something they have unconsciously learned (for example, a process they were guided to at school), or deliberately look for specific approaches for specific tasks. In many of the responses of the interviewed designers, we noted that the procedure (process) was generated for them by influences from the external environment (propositions, collaboration, resources, experience with the proposed subject, etc.).

A good example is "Star Status Design is natural design, based on authentic creativity, communication and perception of the constellation of the social context and the relationships between the statuses that make it up. Therefore, we define a designer as an intellectual creator, a personality with the ability to create knowledge through perception, a permanent creator with the capacity for imagination, based on independent research and development [12].

Design Thinking as A 5-Step Process Is Great, But It Doesn't Solve Everything
Moreover, the procedure does not automatically imply that each step is a conscious cognitive process. Specifically, Prototyping or Test today can yield a single indication, such as the lack of strength of a material without user interaction. The software indicates to us in orders of seconds where the shape is undersized, where and how the material needs to be changed to make the object functional and safe. It is certainly not a big risk to test a leather wallet with the user. Testing an aircraft today with a system: however, let's see, it probably won't get any takers for a relevant test team. Nor would we put a toy in the hands of a child – a prototype whose basic safety is not guaranteed. Prescribing a more suitable profile from a developed catalog or a better shape suggested by software cannot be considered a „unique authorial act".

Let's think, especially in developing students' Design form skills, which is thinking. We can develop its unique prerequisites in each of our students almost limitlessly throughout their studies. Let us understand this as a pedagogical responsibility. Let us think about how to motivate them to think, how to teach them to take care of their own thinking abilities. Methods and practices are certainly useful. They help, but they are from a different keg. Contemporary Design thinking for design forms designers will soon be a thing of the past). Just like other processes we were taught decades ago (in the 80's it was the so-called value analysis for example). Technology and the development of society will bring new needs and relevant design processes to them. Unless we are overwhelmed by AI, the human ability to think, to invent creatively, will remain irreplaceable in design.

But let's go back to the first step of Design thinking (TED conference) to emphatizing. Once again, we are displeased to note that design forms students are disproportionately and quickly focusing their attention on users. The speed is directly proportional to the understanding of the concept of emphatizing. Are we empathizing with the issues or only with the experience, needs and wants of the users?

It may be confusing to some why we use the TED conference moniker. It is our nick-name. It's somewhat calculatedly attributed to TED. But there it most often appears as a diagram, a tool to explain a rather complex theory in a nutshell. In fact, there is a very extensive analytical process for effectively designing marketable, useful products. This is Design thinking for any design based on business management, marketing as one of its tools, but also business, business economics, etc. (i.e. not just design forms). Naturally it considers the needs of users, but in a more sophisticated and complex way. It has been successfully applied in its educational programs, e.g. by the MIT Sloan School of Management. Their process leading to the design of a product with a high potential for success in specific markets (to solve a problem) consists of more than twenty chronological steps. The MIT Sloan School of Management also uses a 5-step model. Primarily as an integrator of theories that it further develops for management practice.

Yes, MIT also works at conferences and on the web with presentations not burdened with too deep a dive into the issues. (The 5-step model is especially frequent when communicating with the general public). Audience attention we know is not infinite! However, MIT students receive extensive systematized information in programs and blocks. Leave it to them, they know what they are doing.

If we do not point this fact out to the students of design form, they may interpret the steps of the process in their own way and fill in their content insufficiently. Without knowledge of management and marketing, they can hardly be accused of a one-sided (lay) interpretation. The question then remains whether the Design thinking method is really a purposeful tool. What about the competence of educators if only a reduced interpretation satisfies them? In the pedagogical process, for example, it is precisely in the context of emphatizing that we have encountered too much adoration of the end user. It is exclusively represented by a person - even shifted according to the criteria of the Sloan School of Management into a typical persona - i.e. the goal of satisfying by proposition and providing unique benefits by product (Unique selling proposition). It is to be commended that they have also reached out to organise focus groups. Unfortunately, they are usually made up of a small number of willing enthusiasts with no relevant stratification. Looking critically at the above procedure, we find an insufficient breadth of knowledge and direction of reflection among the students.

Design Thinking Should Be Interpreted Correctly in Design Schools

Take the example of a chair in a barber shop. Who is the user? A customer expecting super comfort once a week, maybe twice a week. He sits in it for a maximum of ¾ of an hour. Is it a barber using a chair as a working tool? Its characteristics certainly affect the quality of the work but also the barber's physical performance and health. The ergonomics of standing work are important. He spends hours at it. Is he a cleaning crew worker? He cleans around the chair and cleans or disinfects the chair itself. In the case of both the barber and the cleaning crew, contact is daily. But there are still plenty of people who make a living from making chairs. Hundreds of chairs pass through their hands. They assemble, transport, adjust on site. Eight hours a day, 5 days a week... If not designed well it can injure them, the manufacturing blanks toxicity damaging the body.

Do the users include the owner of the salon? It is his property! He is considering the value for money, the profitability of the business. He needs the atmosphere in the salon to be friendly and relaxed. He needs to get customers for a return on investment, but also capable staff. Customers without barbers, barbers without customers, a dirty salon, or a salon without chairs does not generate money. Expensive equipment is seen by the bank's loan department as a risk to the return on the loan. Unfortunately, incompetent students statistically clearly identify the only person who is a user as a man who wants to get a haircut or a beard trim.

Conclusions

In addition to various other attributes of the era we are currently experiencing, we can speak of an era of concepts. Semiotics even defines it as a semiotic catastrophe. We lose insight, chaos ensues, we don't understand, we don't comprehend, and finally we overlook. Concepts are used in isolation by groups, bubbles, tribes. But sometimes they become viral - a fashion or a trend. The question remains whether the rest of the world, but especially users, interpret them correctly.

For a long period, we have been trying to orient students – future professionals, teachers, the professional public, but we also admit ourselves through relevant interpretation and analysis of concepts. We find the cracks through which ambiguities, ballast, multiple meanings enter the interpretation. Not intentionally, nor by design. The reasons are various. Sometimes incompetence, sometimes over-zealousness or professional blindness. Our paper does not intend to impose an opinion on anyone. See it as a word for discussion, a healthy polemic. An inspiration for research, but also a stimulus for critical thinking. A warning against superficial acceptance of everything that information portals spout. The prepared swim, the unprepared drown.

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