David Kelley, Created or Born Designer, Study with an Individualistic Approach

Andi Farid Hidayanto*, Mafazah Noviana

Design Department, Samarinda State Polytechnic, Samarinda, Indonesia

*Corresponding Authors

ABSTRACT

There are many famous modern professional designers in the world, one of them is David Kelley. A modern industrial designer who specializes in producing functional and aesthetic products. The products produced are functional, beautiful, and can be produced based on industrial standards. David Kelley is also the founder and manager of the famous design bureau, IDEO. David Kelley began his career as an electrical engineer with no formal background in design. His interest in the world of design developed when he was placed in a work environment related to design, which eventually made him a professional designer. This transformation phenomenon is interesting to study further. How is the transformation process of someone without a design background became a designer. The factors that support it, influence it, and whether these steps can be followed by ordinary people who have an interest in the world of design. In this study, the Zolberg method approach is used to analyze the background of the ordinary person in design. This analysis aims to assess swhether the ability as a designer is acquired as a gift or can be created through the process of learning and experience. This research is expected to provide an understanding of the phenomenon of individual transformation from unprofessional person to expert in a particular field. The results of this study can also be useful for those who have an interest in the world of design, but do not have a formal background in it. By studying the steps taken, someone can change their career and future according to their interests and existing conditions.

Keywords: David Kelley, Designer, IDEO, Innovation

INTRODUCTION

David Kelley was born 1951 in Barberton, Ohio, United States. He is an entrepreneur, designer, electrical engineering engineer, innovator, design consultant, and design teacher. David Kelly is the founder and manager of the IDEO Design agency which is famous for its innovative works. David Kelley now dedicates his life to the development of the world of design.

David Kelley is recognized as one of the United States' leading designers and innovators. He has received many awards, such as the Edison Achievement Award (2009) for product innovation, the Chrysler Design Award (2000) and the National Design Award (2001) for product design, Sir Misha Black Medal (2005) for the development of design education. David Kelley is also a professor of Industrial Product Design at Stanford University. He founded the Hasso Plattner Institute of Design design school, known as d.school.

IDEO (read: eye-dee-oh), founded by David Kelley in 1991, is a design company that creates breakthrough on new products by solving real problems faced by users or consumers. There is indeed market research, but the most important thing is how to observe people, because IDEO as an innovation engine is guided and focus on observations based on human activity.

Some of IDEO's own clients provide input to IDEO on the expected process for creating a new product. These clients think they really know the character of the people who use their products. These clients initially thought they had carried out practical innovation for various reasons. IDEO accepts these inputs well, but does not immediately implement clients' idea. IDEO has its own method for searching and finding the real root of

the problem and discussing it among the team, focusing on thinking and seeing the problem from IDEO's point of view.

Has it ever crossed our minds, what do the products we see every day have in common? Such as work space, drink bottles, fishing equipment, high-tech medical equipment, and laptops. The answer is none. All of these tools are objects with technological development. All of these works are the result of thoughts created by innovation and solutions of people's problems in everyday life. These tools, which are then called products, are made through industrial manufacturing processes. Whether small, medium or large industry. Capital intensive industry or labor intensive industry (Nurcahyanie, 2007).

David Kelley, with his innovation abilities is able to produce some good design work. This is because his concept of thought combines several scientific disciplines from the people he leads by observing human activities that made innovative and humanistic products are born. Even though he doesn't have a design background, he is able to become a professional designer.

This study aims to study the journey of an individual without a design background to become a professional designer through a case study. This is done by examining the factors that influence the transformation, both internally such as personal interests and motivations, and externally such as work environment and education. The goal is to find out whether someone can become a designer because of natural innateness or because they are influenced by the environment and experience.

THEORETICAL FRAMEWORK

Everyone is a designer by nature. Whatever we do, every moment, is a design activity. Design is the basis of all human activities (Papanek, 1974). Design has essentially existed since ancient times, with very diverse meanings. Gregory, defines design as "relating product with situation to give satisfaction", which prioritizes the relationship between objects (items) and a certain situation or condition, with the aim of providing satisfaction for the user of the item (object, product). There is still confusion between the terms design, applied arts and crafts. The term design also developed in engineering circles, which then developed rapidly in line with programs that accelerated the field of science and technology. In engineering, design develops with an emphasis on high engineering weight (Sachari, 2005).

Product designer is a profession that examines and studies design using various approaches and considerations, both in terms of function, technological innovation, economics, ergonomics, engineering, materials, socio-cultural, aesthetic value, market, and environmental considerations. From a scientific aspect that has the opportunity to expand, product design also examines matters relating to the relationship between products and humans, technological innovation, design theories, and visual culture in general. Industrial product design covers several industrial scopes (Sachari, 2005).

When artistic value meets industry, designers begin to make decisions about what kind of product will be mass produced in the manufacturing industry in the form of a functional product with its innovations (Santosa, 2014).

Innovation is not only related to creativity in producing products and services, but also that which can create new technological processes. Innovation is not only for creating products or services. But creativity can also create new management controls, which can make businesses survive and compete in existing competition are businesses that emphasize aspects of management, resources, and technological capabilities that are owned (Tjandra et al., 2022). David Kelley did this by establishing the design bureau IDEO.

Kelley states a human-centered approach to innovation that draws from design tools to integrate the needs of people, the possibilities of technology, and the requirements for business success to produce functional, innovative goods (Lazuardi & Sukoco, 2019). This was developed by Kelley by compiling the design thinking method which is popular today.

Becker (1982) stated that all works of art/design, like all human activities, often involve the joint activities of large numbers of people. Through their collaboration, the works of art (products) that we ultimately see and hear will continuously emerged. Exploring the nature of design, whether in the world of design itself or in general discussions of design, sometimes the question arises of where the product was created. Does it matter who created the product, how the creator became a designer, or whether the designer worked alone or as part of a group. As stated by Howard Becker, the individual designer is transformed into a team player. Of course, when he presents the process of product production Zbthere is a slight difference between creation and reception (Becker, 1982).

Design is a process that is closely related to the level of education and culture of the designer, because this influences the design process. The higher the level of education and culture behind it, the higher the ability to carry out the design process. This is related to the high or low level of education and mastery of science and technology (Palgunadi, 2007).

Becker in Art Worlds explains the role of artists/designers in society. Includes a series of elaboration essays published over several years and an approach developed in his studies of deviant sub-cultures, as well as the designer's own experiences. Becker starts from the point of view of microscopic interactions between participants, gradually moving towards larger and larger societal patterns that serve as a basis for and ultimately merging into a vast and complex society encompassing various artistic worlds (Becker, 1982).

RESEARCH METHODOLOGY

According to Zolberg (1990) theories about artists/designers tend to group around two types of approach: Individualistic or Sociological. Individualistic approaches include explanations derived from aesthetic scholarship and psychological research. To find out about designers, it is necessary to know their background, concepts of thought, the factors that influence them both internally and environmental conditions, it is necessary to study the social background and social construction in their work (Zolberg, 1990).
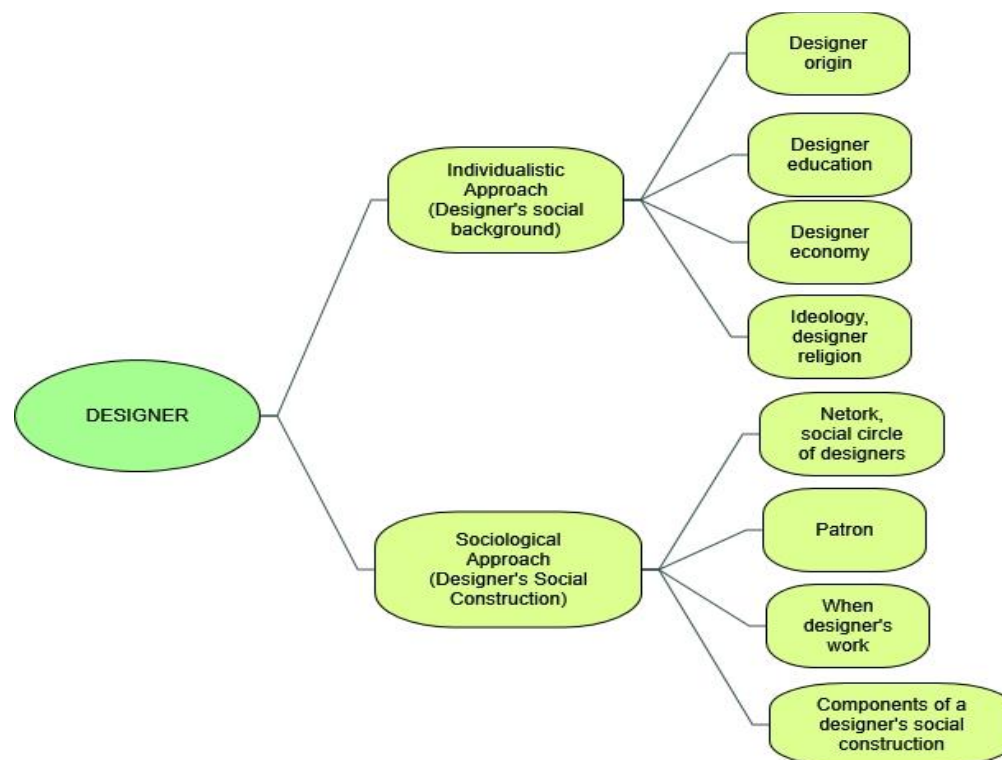

Figure 1: Concept of the process of designer emergence (Zolberg, 1990)

From Figure 1 above, the designer's social background includes:

a. Designer origin is the area where the designer was born, the area where the designer creates.
b. Designer education is designer's educational history, formal study through educational institutions or

independent study (self-taught).

c. Designer Economic Conditions is an encompassing designer's life in their work from the perspective of the economy, industry and the institutions that influence them.
d. Ideology, designer religion is the concepts of designer thinking, doctrines that influence the designer's style/thinking

Meanwhile, social construction Influences on designers' work include:

a. The designer's network of friends and social circle
b. Patrons
c. Components of social construction at work

The products produced by designers must be able to be explained in terms of the various components that make them up. From a sociological point of view, designers are viewed from a psychological perspective, including:

a. We will always see the dominance of micro institutions and social factors in the realization or absence of artistic value. Internal institutions influence and derive from the process the emergence or absence of artistic value.
b. Support from socio-cultural circles/institutions for talent development.

Psychologists have attempted to explain this process where design ability emerges as a reflection of the designer's individual internal traits, such as talent/intelligence, drives and compulsions, or reactions to personal experiences.

Social roles are sometimes treated as if they are fixed, real roles in society. But the role can also be understood as being in the process of construction. As with other social roles, the role of the artist develops through macro-historical processes in interaction with the micro-strategies of those who attempt to play those roles (Bourdieu, 1993). Sociologists and social psychologists agree that social factors enable or hinder the development, acceptance and support of design talent. Gardner emphasizes that these processes depend on the relationship between the designer's personality traits, of which talent is one factor.

According to Bourdieu, the macro structure of the state, systems of social domination, and access, both symbolic and material, appear to have to be continuously integrated into sociological analysis. When it comes to art and artists, artists only understand the artist as acting in production and consumption (Bourdieu, 1993).

RESULTS AND DISCUSSION

A piece of music is called a creation and a pair of shoes is called a product. Although this difference in labelling was protested by several figures, such as John Dewey, it was generally still acceptable. Usually, we call a designer's work a product. Cars are not created on a conveyor belt, but are manufactured products through several processes.

Figure 2: David Kelley (Camacho, 2016)

David Kelley is a famous designer, founder of the IDEO design agency which has produced many product works. The characteristics of IDEO products are continuous innovation, user friendly and reflecting hi-tech products that make them win many awards. To find out more about David Kelley, you need to know about him.

David Kelly background

David Kelley was born in 1951 in Barberton, Ohio, United States. Only a few knows about David Kelley's past. So, there is not much information that can be extracted, including things that influence his lifestyle.

Educational background

David Kelley graduated bachelor's degree in electrical engineering from Carnegie University, Mellon, United States in 1973. Between his busy work as an engineering technician at Boeing and NCR companies, David Kelley continued his postgraduate education and earned a master's in Product Design from Stanford University in 1978. He continued his education until 1991 he achieved Professorship at the same place and in 2004 he taught at Stanford.

Employment history

After graduating his bachelor's degree in electrical engineering in 1973, David Kelley worked as an engineering technician at Boeing and NCR. At the Boeing company, David Kelley was responsible for the lavatory of the 747 series aircraft. Feeling less of a challenge in that place because he just sat, worked, and followed the rules, David Kelley realized that he had to start his own business. To achieve success, he must lead. Here, David Kelley began to be interested in design.

In 1978, David Kelley partnered with another product design graduate from Stanford University, namely Dean Hovey, to establish the design agency Hovey-Kelley Design. During its development, this bureau changed its name to David Kelley Design (DKD). In 1991, David Kelley merged DKD with three other design firms (Mike Nuttall's Matrix Product Design of Palo Alto, ID Two of San Francisco and the Moggride Association of London) to become IDEO. Apart from teaching at Stanford University, David Kelley founded the design school Hasso Plattner Institute of Design, known as "d.school" as a manifestation of his concern for the development of the world of design.

IDEO is a design consulting agency founded in Palo Alto, California, United States. IDEO now has branches in San Francisco, New York, Boston, London, Munich and Shanghai. This bureau employs around 550 employees in various disciplines, including: marketing, business, graphic design, electrical, environmental, mechanical, food/nutrition, health, product design, management and informatics. This design bureau has worked on thousands of projects for a number of products, including computers, medical equipment, furniture, children's toys, office equipment, the automotive industry and so on. Beside leading and running IDEO, D. Kelley is a design teacher and innovator in several locations in America.

Figure 3: IDEO design bureau logo

Ideologies that influenced David Kelley

As a layman about design, who ended up getting involved in the world of design, of course there are several factors causing why David Kelley got involved in the world of design. Starting from working in the design

division at Boeing, David Kelley became interested in the world of design. It encouraged him to continue his education at Master's and Doctoral level in the field of design, especially Industrial Product Design.

David Kelley's thinking was heavily influenced by Victor Papanek (1972) with his hexagon function design. Papanek stated that the form of a product follows function (Form follows function, a slogan pioneered by architect Louis Sullivan in 1880). Industrial products are processed in the manufacturing industry which consists of several product elements whose usefulness is taken into account. There are no elements that have no function, if there are any, it is a failure of the product element because it is a waste of material. So, to make all the beautiful frills are not lost, we have to adjust its function, Victor Papanek formulated 6 design functions. Because after all, people prefer that the everyday equipment they use look beautiful. The six elements are: use, need, telesis, association, aesthetics, method, and use.
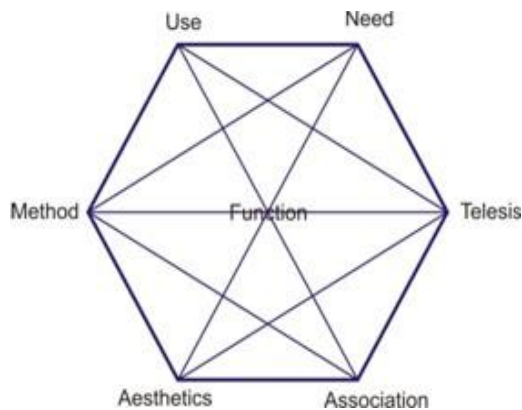

Figure 4: Victor Papaneck's design function hexagon (Papanek, 1974)

Soedarso SP describes the hexagon function of Victor Papaneck's design as follows (SP, 2006):

a. Method is the interaction among tools, processes, and materials. It is possible to produce products according to predetermined methods and processes by considering several factors, including: machinery used, raw materials, production systems, workforce skill level, production costs and standardization.

b. The use of materials that match the quality and capabilities are an absolute requirement. Materials and tools interact with each other and must be applied optimally and not using a material if there are more efficient materials to use. Meanwhile, the most appropriate tools and work processes must also be selected. Products are prepared from materials according to complex manufacturing industry standards. These materials do not have to be produced yourself, they can be subcontracted to other industries. So that there is material uniformity according to existing regulations and standards. These components are then assembled according to the production process. Accurate selection of materials, work tools and processes will produce products with an efficient production process.

c. User is the precision of form to be achieved by its usage. All parts that make up the product have a functional form. There is no form that is wasted, because everything has a task. Such as dimensions, layers, joints, curves and colors. This relationship is not only with the user, but also with the association.

d. Need, many of the designs only fulfill momentary needs that disappear immediately. Products are designed to meet consumer needs according to their class. This is to meet consumers' economic, psychological, spiritual, technological and intellectual needs of society.

e. Tellesis, is the use of processes in nature and in society consciously and with the aim of achieving certain targets. Therefore, it is not appropriate to imitate customs or designs in other places that have different nature and environments. The design of a product is adapted to the conditions of target consumers, and has undergone several fitness-to-use tests.

f. Association, is a reference standard for design implementation that has been determined by certain associations. Such as National Standards, Ministry of Industry, and other associations.

g. Aesthetics, is the main design goal. The concept of beauty of form to be achieved requires ornamentation of the form. Including aesthetics in function there is no other way to avoid it. The presence of aesthetic elements makes the product form have a state of art so that it is accepted by consumers.

Work network

Entering the 20th century, design was the result of team's effort rather than individual achievement (Walker, 1989). In IDEO there is a combination of forces between various scientific disciplines. The team has a variety of special skills and knowledge needed to make the product.

David Kelley doesn't believe the myth about a genius working alone, away from the crowd and waiting for a big idea to appear. David Kelley believes that everyone is a genius and can be creative. The aim of establishing IDEO is to explore sources of creativity to make innovation a philosophy of life. IDEO creates a conducive atmosphere so that its people (employees) can freely express ideas, break rules, and design a comfortable work environment for themselves. IDEO's focus on teamwork has resulted in countless breakthroughs. Employees share ideas and get the benefits of the group process.

According to Tom Kelley, at the beginning of IDEO's founding, David Kelley hung out a lot with the CEOs of companies that were just developing at that time. From Apple, David Kelley was inspired by the informal work atmosphere. Employees may wear jeans and no shoes. A high culture of innovation, employees of various ages and various experiences mingle without feeling awkward. But they all still get the job done (Kelley, 2001).

The founder of the Charles Schwab brokerage firm influenced David Kelley in assuming the perspective of his customers. Teaching the designer's attitude as a customer. If you make products for chefs, you have to act like a chef, if you make tools for doctors, you have to act like a doctor or patient, and the same goes for other products so you know the taste and situations faced by consumers.

Bob Metcalfe, CEO of 3Com influenced David Kelley's attitude to continue making new versions and developing the products he had produced. This product development can be applied (compatible) with other products. For example, the EtherLink card can be used on IBM PC computers (at that time IBM PCs were used in almost all of America, so EtherLink cards could be used in all of America).

Larry Miller of General Motors inspired Kelley to look for humanistic shapes (without sharp corners) for the equipment he designed. The humanist shape makes the equipment safe and comfortable to use according to the structure of the human body (ergonomics).

Dogmas, David Kelley's thought concept

David Kelley does his job with pleasure. This feeling of pleasure includes the feeling of joy in dealing with problems, the feeling of joy in solving problems to the feeling of joy when seeing the results of the design process. In fact, implementing the design process is often not an enjoyable work. It is often considered as a boring activity, takes attention, requires perseverance, tiring, confusing and takes a long time to complete. So, the design process is considered as hard, tiring work. Whether in art, science, technology, or business, inspiration often comes from the immediacy of action. This inspiration can come from observation. IDEO carries out direct observations in the field in product use. Focusing on observation, human habits are revealed, and this is what actually has the power to change existing rules for the better condition.
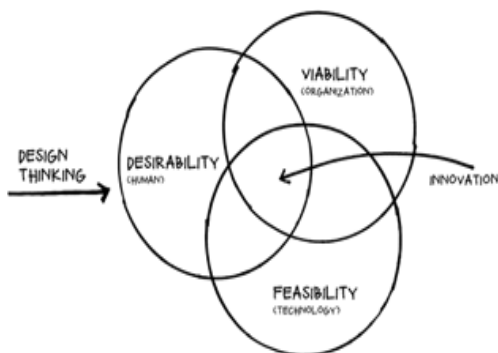

Figure 4: David Kelley's basic concept of thought in producing innovation (Kelley, 2001)

Concept of thinking

David Kelley's work place is unorganized and sometimes they work and play at the same time, noisy and seems chaotic. However, David Kelley has a method of creating which is well developed and continually refined. These methods are (Kelley, 2001):

a. Understanding the market, clients, technology, and the obstacles that arise from a problem. In designing products, David Kelley often challenges these constraints, but what is important is understanding current perceptions.
b. Observing people in real life situations to find out what makes them behave the way they do. This is to learn what is not fulfilled by existing products and services in the market.
c. Visualizing the new concepts and the customers who will use them. This is useful to predict future products, before they actually exist.
d. Evaluating and refine *prototype* repeatedly and quickly. Don't stick to the first prototype, because the product (idea) will undergo a series of improvements towards perfection.
e. Applying the new concept for commercialization.

This simple step can be done to design everything. This method helps to create acceptable products for the customers.

David Kelley stands on both sides of the innovation business. As a practitioner and advisor. Every day working with the world's most important companies to bring innovative products and services to market. Combining various scientific disciplines in a design process, the end goal will be to produce the desired product. In his work, David Kelley also considers social conditions as a form of responsibility. David Kelley does not consider purely technical aspects, such as short-term designs or fashion designs that are released every year.

David Kelley produces a number of designs and products that contribute to the disabled community and poor communities. According to David Kelley, social interests remain the main priority and require supervision regarding the technology they contain. If a sense of self-confidence grows in a disabled society, then disabled people have a positive opinion that technology is able to meet their needs. This results in an increase in purchasing power resulting in an increase in product demand. D. Kelley tries to bridge social conditions with design. Thus, design can help solve social problems, as long as the concepts of its theories are applied by its users (Sachari, 2002).

In its history, the world of design experienced the ups and downs of culture, technology and science. Competition is getting fiercer. To survive, David Kelley chose a path and strategy to win this global competition. The key is innovation. Innovation is carried out by observing and changing for the better. Everything is documented as a portfolio. The innovation is a goal-oriented process, with tight deadlines for the final result. As modern art, product design with all its creativity is always expecting for innovation and change in forms of novelty (SP, 2006).

CONCLUSION

David Kelley, who initially did not come from a design background, succeeded to become a professional designer using experience and dedication in the design world. Kelley shows that one does not have to be born with design talent to become a professional designer. Through his experience at Boeing and his ability to innovate, Kelley built IDEO, a design agency that focuses on solving everyday problems through an innovative and humanistic approach. Kelley's design concept combines function and aesthetics, where the products created are not only beautiful but also functional and to fulfill the needs of the user. Kelley also believes that innovation is the key to success, which is achieved through observation and team collaboration.

The application of methods such as those developed by David Kelley can be integrated into design learning in educational institutions. This can help students understand the importance of function in design besides its aesthetics. This encourages young designers to not only rely on individual ideas but also work in cross-

disciplinary teams to produce innovative products. As David Kelley did, it is important to continue to deepen knowledge and skills through formal and informal education, especially for those who want to move into a new field without having a background in that field.

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