INTERIOR DESIGNERS IN SOCIETY 5.0, MACHINE UTILIZATION IN MAKING INTERIOR WORK EASIER

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ABSTRACT
Society 5.0 is a concept that allows humanity to use modern technology-based science such as machines to meet needs and make human life easier, especially for interior designers of interior work. The presence of society 5.0 has made a major contribution to interior designers. The purpose of this study is the existence of a technology-based machine learning innovation that makes it easier for designers to work on designer work methods, designer communication methods and work methods in workshops without regard to space, time and place. Through a case study approach, with qualitative descriptive analysis, the role of interior designers in the era of society 5.0 can be understood. An interior designer not only works and masters computers as a medium for designing his designs, but must master and operate supporting machine tools in realizing his ideas. In addition, interior designers must also apply the concept of sustainability design as a sustainable development goal, which is very concerned with environmentally friendly design.

Introduction

The concept of society 5.0 is a concept that is still in the development and debate stage, but in general refers to technological developments that continue to increase automation and digitalization in industry and the production sector. This concept focuses on the combination of technology and humans, as well as the need to develop systems that are more adaptive and responsive to changes in the production environment. Society 5.0 emphasizes the integration of advanced technologies such as AI, IoT, and the use of machine technology with human expertise and innovation that can drive the development of more efficient, flexible, sustainable production systems and improve welfare. This aims to create a production system to facilitate interior work that is more adaptive to changes in market demand, more focused on customer experience, and optimize the use of limited natural resources.

Figure 1 Machine Technology in Society 5.0
Source: Indonesian Student Media

Being an interior designer is not only having the skills to channel creative vision in combining design elements in a composition, but interior designers as problem solvers require insight and creativity in seeing problems that are developing in today's society. The challenge for interior designers is how to see opportunities to create creative ideas in facilitating human activities and behavior in the space needed in the era of society 5.0. The current Indonesian interior industry through the use of machines to facilitate interior work. In society 5.0, interior designers will integrate machines and other artificial intelligence that are believed to help humans more optimally. So designers with several methods and approaches can focus on creating innovation and creating new ideas more actively https://lintar.untar.ac.id/repository/penelitian/detikpenelitian_10698002_2A220222 124637.pdf

As explained by Robertus Wahyudi Triweko, that currently the world and its people are experiencing changes with the concept of society 5.0. A concept related to the challenges of infrastructure development, production systems, and the concept of sustainable development, optimization of AI knowledge and mastery of information and communication technology. [1]

Here are some other advantages of the Era Society 5.0 concept as follows: 1) Increased Efficiency and Productivity. Society 5.0 will enable increased efficiency and productivity in various industries with process automation and the use of new technologies such as the use of AI and data analysis. For example, in the HR sector, the use of HRIS technology allows companies to integrate company data. This can make it easier for companies to manage employee data and inventory in one platform that is easily accessible anytime and anywhere; 2) Product and Service Quality Improvement. By using advanced technologies, companies can improve the quality of their products and services, thereby increasing customer satisfaction and strengthening their position in the market; 3) Increased Production Flexibility. Society 5.0 will enable companies to

produce more diverse products and adapt to market demand quickly; 4) Improving Occupational Safety. Technological developments towards the 5.0 era will enable the use of robots and other advanced technologies to reduce the risk of accidents and injuries in the workplace; 5) Sustainability Improvement. The essence of the 5.0 era is to help industries care more about the environment. This can start with using green energy technology and more efficient and responsible production processes not only for society, but also for their impact on the environment; 6) Increasing Competitiveness. By implementing advanced technology and more efficient production processes, companies can increase their competitiveness in the global market and expand their market share. Existing human resources are also required to continue to improve their skills so that they do not only do repetitive work, but are also able to have strategic thinking to improve performance; 7) Improvement of Quality of Life. Society 5.0 can help improve the quality of human life by increasing access to better health and education services, and enabling the development of more sustainable and environmentally friendly smart cities. https://www.djkn.kemenkeu.go.id/kpknl-lahat/baca-artikel/16023/Mengenal-Revolusi-Industri-50.html

The purpose of this study is expected to increase productivity and reduce costs from the use of machines used in interior work. A process that can also save work time so as to create a work with good skills and results from existing machine technology. Interior designers in society 5.0 are expected to be able to create new values through the development of sophisticated technology so as to reduce the gap between humans and future problems. In addition to the above, design thinking is an effort to understand the meaning and scope of design in a digital society.

Based on the explanation above, the problem formulation is: 1) How can innovation drive the development of more efficient production systems? 2) How to optimize one's knowledge with the help of AI? 3. How to speed up work with the help of machines?

Method

The method used in this study is descriptive qualitative with a phenomenological approach. Qualitative methods are defined as research methods in describing finding diverse realities and developing a holistic understanding of a phenomenon in a particular context. [2]According to Rovai, it is quoted as mentioning qualitative methods as methods that are usually used in describing inductively, with assumptions based on the construct of social reality, variables that are difficult to measure, complex and interrelated, and the data collected contains in-depth perspectives from informants. Qualitative research is chosen because of the proximity and ease of access to information related to the research. [3]

Furthermore, the approach used in this study is the phenomebology approach. The phenomenology approach has the aim of interpreting and explaining the experiences

experienced by a person in this life, including experiences during interactions with work equipment or machines. Phenomenology is a type of research that looks and listens more closely, in detail to individual explanations and understandings of their experiences. In the context of qualitative research, the presence of a phenomenon can be interpreted as something that exists and appears in the researcher's consciousness by using certain methods and explanations of how the process of something becomes clearly visible and real.[4]

In phenomenological research, it is more focused on finding, studying and conveying the meaning of phenomena, events that occur and their relationship to ordinary people in certain situations. Qualitative research is included in pure qualitative research because in its implementation it is based on efforts to understand and describe the intrinsic characteristics of phenomena that occur in oneself. [5]From the various definitions above, it can generally be concluded that the purpose of qualitative research is to describe a particular phenomenon. This is reinforced by the opinion [6]that qualitative research or descriptive research aims to describe a phenomenon with the various characters that surround it. Furthermore, Nassaji also said that this research is more concerned with what than how and why something happens.

The method used by researchers with this phenomenological approach will answer the formulation of the problem by means of: observation, data and documents from several interior designers as individual sources through their experiences in responding to the role of machines in facilitating interior work in the current era of society 5.0. In addition to the above, it is also about the factors that influence the experience of existing phenomena. Qualitative methods with a phenomenological approach try to solve various problems and can reveal the meaning in them.

Discussion

Problem solving approach of society 5.0 concept in interior design work

1. How innovation can drive the development of more efficient production systems efficient?

Of course we agree that innovation and strategy are a way to make production more efficient to increase the success of the business/work being undertaken. The production process can be accelerated, waste and unnecessary expenses can be reduced. This is an approach that can increase production efficiency. One strategy to increase production efficiency in the digital era is by using the technology integration approach in the production process. This means that it will periodically reduce human tasks that have the potential to increase productivity. With the integration of technology, it will optimize the use of resources and will cut operational costs, and create production efficiency.

Related to Sustainable, plays an important role in reducing environmental impact by optimizing energy use. The main goal is to monitor and reduce inefficient energy use during production, encourage the realization of better energy efficiency and ensure sustainability in the long term.

To achieve successful production efficiency, we must adopt appropriate innovations and strategies. Success lies in the use of cutting-edge technology that allows for effective optimization of production processes. Integration of innovation, strategy and cutting-edge technology leads to improvements in production efficiency. This shows how companies can optimize operational activities, minimize production costs, and simultaneously, generate higher profits. Controlling energy usage not only facilitates efficiency but also ensures the sustainability of the business in the future.

New challenges and opportunities in creating an environment that supports the well-being and sustainability of the interior world that designers need to pursue. Here are some inputs related to the current society 5.0:

a) Use of Smart Technology, Interior designers must now consider the use of smart technology into the design of spaces. This can include the use of smart control systems for lighting, air conditioning, and security systems. Designers must also design spaces to support the increasing number of smart devices that people are using.

b) Space Flexibility, with the trend of remote working and more flexible use of space, interior designers need to create spaces that can be adapted to various activities. This may involve using convertible furniture or movable partitions to create an All in work, living or study space.

c) Health, Interior designers will increasingly consider health and wellbeing factors in their designs. This may include the use of environmentally friendly materials, lighting designs that support the integration of natural elements into spaces to enhance the wellbeing of their occupants.

Understanding the trends and values of Society 5.0, interior designers can create environments that are not only aesthetic and functional, but also support the well-being and sustainability of their occupants.[7]

2. How to optimize one's knowledge with the help of AI?

"Artificial Intelligence (AI) is a branch of computer science that represents knowledge using symbols rather than numbers, and processes information based on *heuristic methods* or based on a number of rules". (Encyclopedia Britannica). Artificial intelligence (AI) allows machines to learn from experience, adapt to new inputs and perform tasks like humans. Using artificial intelligence technology, computers can be trained to complete certain tasks by processing large amounts of data and recognizing

patterns in the data. Some of the fields that use artificial intelligence include expert systems, computer games, machines, and robotics.

Nowadays, computers are no longer only used as a calculating tool, more than that, computers are expected to be empowered to do everything that can be done by humans. Therefore, artificial intelligence is created and inserted into a machine (computer) so that it can do work like humans can do, for example the ability to answer customer diagnoses and questions, as well as handwriting, voice, face recognition and others. The main scope of artificial intelligence, artificial intelligence is created and inserted into a machine (computer) so that it can do work like humans can do, for example the ability to answer customer diagnoses and questions, as well as handwriting, voice, face recognition and others. The following is a diagram of the interior designer's work method in utilizing machines to make work easier, for example in the work of making designs and working drawings that are carried out from manual to computer and laptop technology.
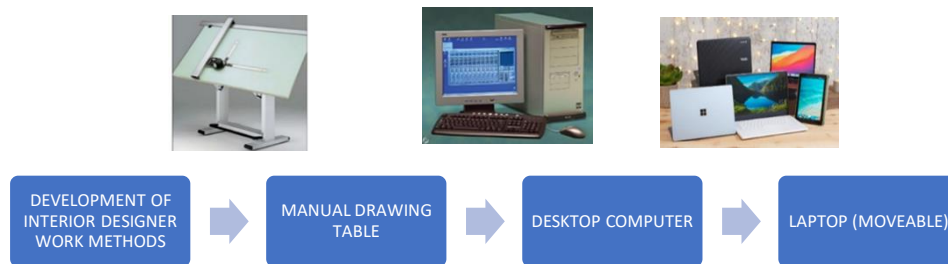

Figure 2 Interior Designer Work Method Diagram
[Source: Doc. Yenny Rares PT. Art Room]

3. How to speed up work with the help of machines?

Artificial Intelligence is a branch of science related to the use of machines to solve complex problems. This is usually done by following/imitating the characteristics and analogies of human intelligence/intelligence, and applying them as algorithms that are recognized by computers. With a more or less flexible and efficient approach can be taken depending on the needs, which affects how the form of artificial intelligence behavior. The development of a technology for interior designers is certainly important in the application of field work processes that require acceleration in their work. A job in processing raw materials into finished goods with a predetermined design through a process in a system that is run with existing machine tools. Workshops are very important when used in the learning process to apply practice. In the work process in the workshop carried out in the workshop as follows:

a) *Molding Process*. A process of printing certain activities using raw materials from metal, acrylic or plywood.

b) *Machining Process*. A process that requires the help of a machine, in removing some parts. This process consists of the process of widening/ *reaming*, screwing/ *shaping*, drilling/ *boring*, *drilling*, sawing, grinding, turning and *fracing*/*milling*.

c) Joining Process. A process of combining several parts into a complete product. For example, products such as *cellphone holder* souvenir crafts, etc.

d) Shearing Process. A process of cutting into smaller parts to be processed further. Usually on metal sheets using a cutting machine called *a shear cutting machine*.

e) Finishing. A drying process after spraying with certain materials in liquid or spray form. The following is an interior designer method in the workshop, showing a comparison of manual work with work through machines.
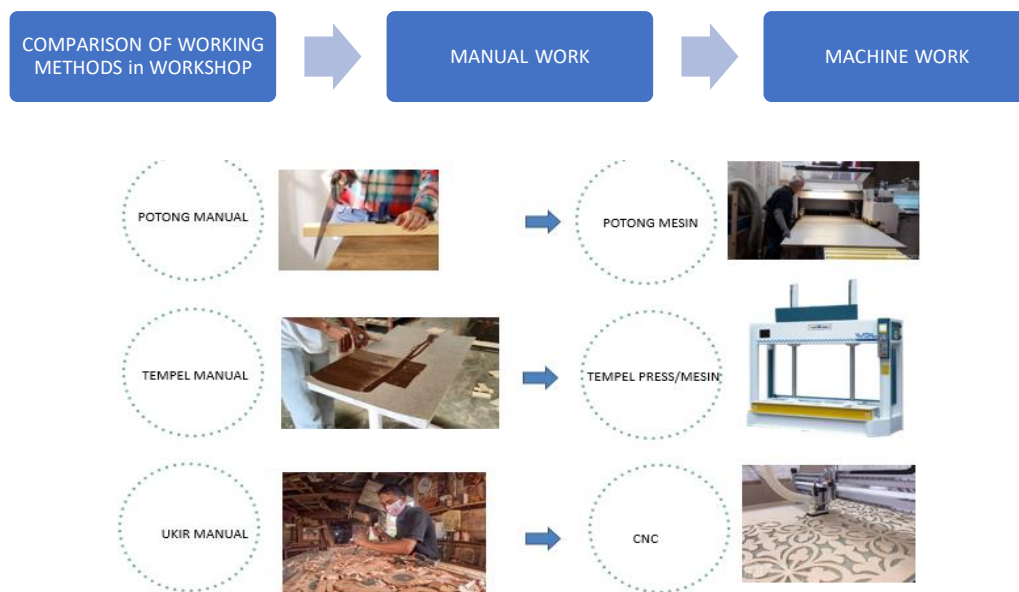

Figure 3 Working Method Diagram in Workshop
Source: Doc. Yenny Rares PT. Arte Roo

4. Interior Designer in Society 5.0

The use of computers in the learning process is highly recommended, because the process of drawing through computer aided design or CAD is something that must be mastered by designers. Using CAD in the drawing process or design process after going through the sketch stage and other design developments, must start from the most basic things when learning CAD. In learning CAD, you can create new layers, set layer properties, and change objects to different layers. You can also set object properties individually, such as changing line colors, changing line types, or determining line thickness. The presence of society 5.0 provides significant changes in the development

of digital interior design technology, this makes CAD a very useful tool in creating technical, detailed and accurate drawings, and is also able to create innovative designs. Efforts to face society 5.0 require us together to think in terms of design in realizing a visual work. The concept of society 5.0 is expected to bring about even better changes. Therefore, interior designers in facing society 5.0 can integrate machines and artificial intelligence which is believed to help humans in making work easier more optimally. So, people can focus on creating innovations and being creative with new ideas more actively. The following diagram shows how interior designers can communicate through several machines easily, starting with offline and continuing online.

Figure 4 Interior Designer Communication Method Diagram
[Source: Doc. Yenny Rares PT. Art Room]

Conclusion

1) The use of machines can speed up the work process; 2) Utilizing machines can save time; 3) The application of machines results in better quality work; 4) Production costs can be minimized due to the speed of the production process; 5) By incorporating AI technology into the machine learning process of interior manufacturing, designers and manufacturers can improve efficiency, accuracy and product quality, which will ultimately speed up work completion and reduce production costs.

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