KURDISTAN ENGINEERING UNION

A report about:

Craftsmanship Approach in Design Process

By Architect;

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ABSTRACT;

Nowadays the design process has systematically separated from the manufacturing process, under the consideration of professionalism, which can be a convincing structured method to assist designers to complete a quality design job according to the project's needs without a physical and direct awareness between the parties before and after the process. On the other hand, in traditional societies, design and making were closely linked, as it's notable in traditionally built Heritage in our cities. This review article tries to find inspiration in the craftsmanship approach as a traditional studio of design facing a current issue of reproduction tactics which is currently noticeable, to achieve the purpose of mass production, despite the quality of the design or its meanings. The research's main aim is to incorporate the notion of the craftsmanship approach strategies into the early stages of the architectural design process depending on previous literature to review. Assuming that the craftsmanship approach in the design process can give authenticity and quality to facilities in the current era of a rapid and massive production process. Identifying a methodology for prioritizing individual and well-done designs in the contemporary architectural design process could be achieved by crafts approaching the design process. The review article represents a narrative for craftsmanship design techniques inspired by traditional architecture, crafts, and nature, defining a strong coordination between intellectual and executive levels. The approach prioritizes user effectiveness, well-being, and performance, considering efficient design quality and individual preferences in creating various products and services. Craftsmanship approach in systematic design strategies can result in aesthetic and ethical solutions, often overlooked in societal traditions.

Keywords; Craftsmanship Approach, The Design Process, Individuality, values, Efficiency, professionalism

Introduction

The craftsmanship can be referred to as "Skill and experience, especially about making objects; a job or activity that needs skill and experience, or something produced using skill and experience" (Cambridge Dictionary, n.d.).
Craftsmanship enables to creation of better products and solutions. thinking that excellent goods require outstanding engineers. Each Designer has a chance to progress when learning new skills to prepare for greater responsibilities and roles. Craftsmanship is a key motivator of professional growth for designers.

The approach can also foster innovation is a combination of design knowledge in points where craftsmen and designers are in collaboration in industry, and the architectural domain is one of them. The design process as an activity of mind resulting a tangible or intangible outcomes needs skills also can be improved by frequent repetition. Creating a product as a response to human needs surrounded by all the relative features in different times and places requires an instant ability to elevate the quality of the solution to be origin on a level of creativity. For example, features of the craft approach such as “risk-taking”, “holistic approach in practice”, and “prototyping” can contribute to new product development (Temeltaş, 2017)
Design is an activity that can be learned by doing (Sennett, 2008), the article considers that original design quality comes from craft approach thinking at the beginning of the process of design continuing to the stage of use and beyond.

1.1. Design Process and Crafting a Product;

Design is a multidisciplinary field that requires a combination of technical skills, artistic sensibility, and an understanding of the user’s needs. Designers often work visually, creating models and prototypes, and their education now includes elements from behavioral and social sciences. However, they are not pure artists, technologists, or social scientists, but combined of all.
The design process has changed over time and designers are looking for a new role in society. The separation of designing from making led to the emphasis on individuality and the individual's connection in design. Most famous architects have unique styles and personalities. (Lawson, 2005)
Being a professional designer requires a tie-up to a professional code of conduct and adopting the responsibilities and obligations. Designers are responsible for the cultural, social, and environmental consequences of their professional decisions. Design professionalism is doing the right thing and building long-term confidence in the domain as a whole, rather than doing something for current personal advantage or gratification (Design, 2020)
the professionalization of design, using the example of architecture in Great Britain. The establishment of the Royal Institute of Britain Architects (RIBA) by the 19th century highlighted a transition for the sake of professionalization, leading to architects becoming a legally protected and socially respected idol. This professionalization was driven more by a desire for status and control than by concerns about design quality. (Lawson, 2005)

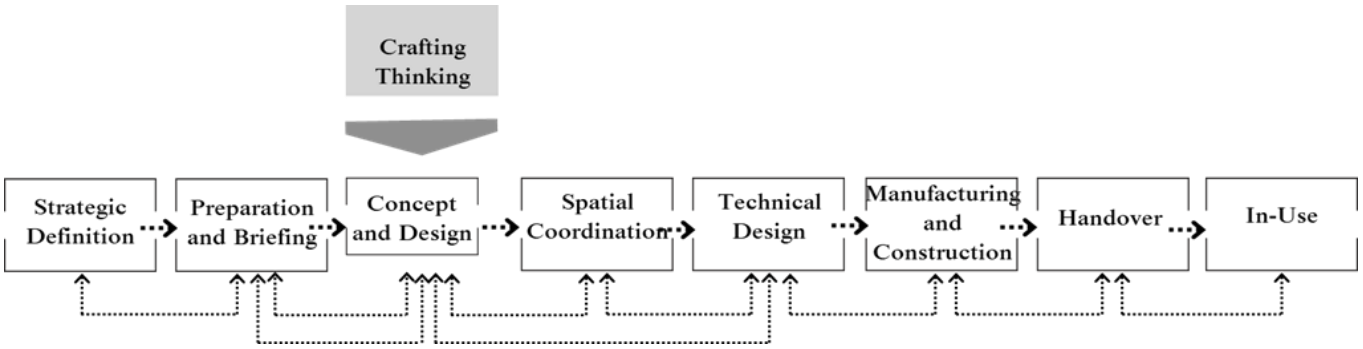

Chart 1.1.1 RIBA Phases of Design Process (RIBA Plan of Work 2020 Template)

In collaborative design, the architect's designs must accommodate the tangible modification of the utilized materials. This leads designers into the domain of artisanship, where individuals with a high level of expertise can handle each component according to its specific context. Professionalism and individuality in design are not exclusive, they can complement each other. However, excessive emphasis on professionalism can sometimes limit individuality (Amabile, 1998).

1.2. Craft as a process of "making" a product;

Linguistically craftsmanship is related to craft and craftsmanship, Craftsmanship refers to the quality of design and workmanship demonstrated in something manufactured by hand. It is the skill and quality that a craftsman puts into their work, while Craft refers to an activity that requires the ability to manufacture items by hand. It can also refer to handcrafted items, although talent of misleading people, a boat or ship, an aircraft or spaceship. As a verb, it means to practice expertise in making something, usually by hand. A Craftsman is a worker who specializes in a particular specialty. It is commonly used to describe someone who works in a trade or craft. (Cambridge Dictionary, n.d.) Because it appreciated human values and creative potential, that craft could be used to integrate knowledge within multidisciplinary collaboration and practice, as well as to support design-related management processes. We also believe that this contributes to the integration of management procedures between macro enterprises and micro design teams. (Kristin Niedderer, 2011) Craft has traditionally been viewed as the poor relation of design or art, with a perceived lesser rank due to its economic usefulness or lack of intellectual rigor. However, emerging approaches to craft content that craft plays a crucial part in human lives and that it enables involvement with human values and the combining and investigation of topics that were not before questioned (Kristina Niedderer, 2011). Craft in architectural design is a multidimensional term with profound roots in architectural history and practice. Historical Background: Since

the 18th-century Industrial Revolution, craftsmanship has been viewed as an alternative to industrialism or mass production. The Art and Crafts Movement stressed each element's handcrafted design.

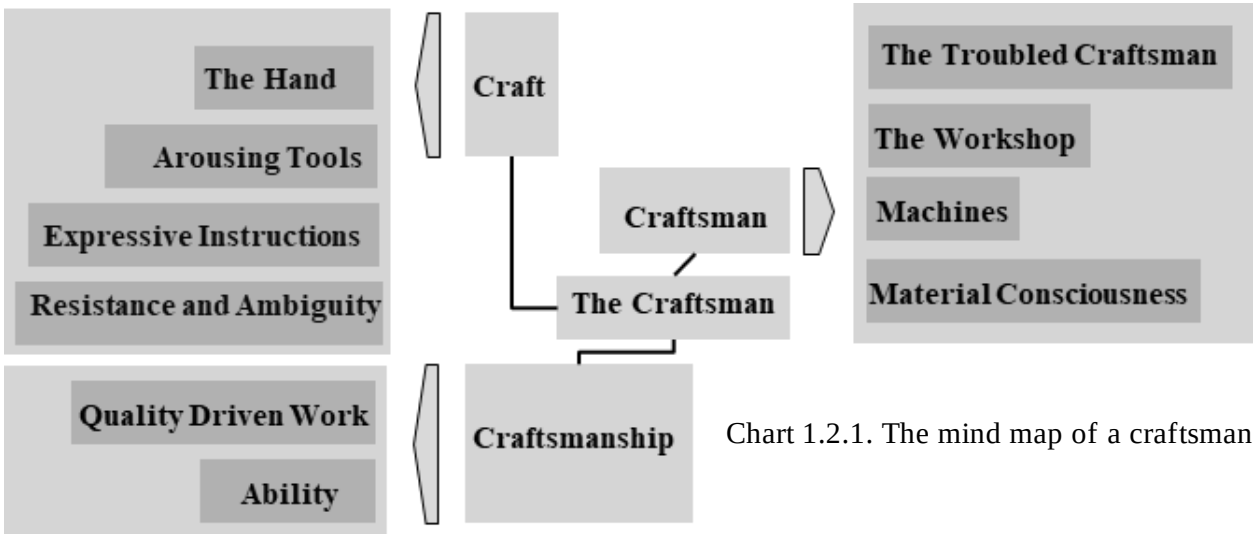

Chart 1.2.1. The mind map of a craftsman

In essence, the notion of craft in architectural design refers to the careful and skillful development of structures and spaces, which requires a thorough grasp of materials, methods, and the relationships that a structure makes with its environment. Division of labor between designers and makers is now a cornerstone of contemporary society. The reliance on professional designers is largely due to the need to address problems created by advanced technology. The challenges of designing a city dwelling, for example, are vastly different from those of a rural highland croft, involving issues of privacy, safety, access, and pollution. (Lawson, 2005). The craft approach to architectural design tensions the role of workmanship in increasing the meaning of built environments. Craftsmen's mental schemata are used to develop acceptable solutions by examining people's requirements, expectations, cultural practices and expressions, and environmental characteristics. This method may be seen at all stages of the architectural production process, from space organization to spatial characteristics, architectural elements, and decorative elements. (Häme University of Applied Sciences)

(Qaradaghi, 2022)

1.2.1. Collaboration between architect and crafters to make a window depending on a trashed piece of tradition from the 1900th in a traditional Kurdish house in Sulaymaniyah city. (photos the researcher)

Report aim;

- The research's main aim is to incorporate the notion of the craftsmanship approach strategies into the early stage of the architectural design process depending on previous pieces of literature to review.
- Identifying a methodology for prioritizing individual and well-done designs in the contemporary architectural design process based on crafts approaching the design process.

2. Literature review on the Craftsmanship Approach in the Design Process:

	Title	Author	Year of publishing	Publishing Institute
Book	The Craftsman	Richard Sennett	2009	University of Yale
Journal Article	Exchange and Collaboration between "Designer" and "Craftsman", Symbiosis towards Product Innovation.	Handan Temeltaş	2017	12th EAD Conference in Sapienza University of Rome in April 2017
Journal Article	Craftsmanship in Contemporary Architecture	Bilal Samir Ali Marwa Abdul Raoof Hassan, Asma M. H. Al- Moqaram,	2023	Iraqi Journal of Architecture and Planning

Table 2.1. the reviewed studies in the article

2.1. Study No.1;

The study contends that the spirit of workmanship includes the "desire to do a job well for its own sake". The book discusses that those who are motivated by only rewards or competitiveness might not produce as good solutions compared to those motivated by a feeling of workmanship to solve a problem as a designed product. The book discusses numerous aspects of competence, ranging in-between technical difficulties to the compulsive intensity required to produce a good outcome. The book investigates the experiences of well-done work shared by computer programmers, nurses, surgeons, glassblowers, and cooks. The book explores deeply the concept of craftsmanship, which is, in particular, significant to the design process. Below are the most relevant points of how solving problems and processing the creation of good products are similar in every design according to the study.

The book burrow into the history of craftsmanship, how work is (or could be be tter organized), the differences between job and profession, the link between fo cused labor and

calm thought, and the connectivity of work and play. In essence, the study investigation of craftsmanship provides useful insights into the design process,

emphasizing the necessity of experience, talent, understanding, problem-solving, and devotion to excellence.

Problem Creation	Both craftsman and Designer often create and solve problems to improve their designs and understand the solution more.
A process and a Journey	Both processes solely not about the final product, but also encompasses the exploration, learning, and refinement that occurs throughout the process
Historical Divisions	historical similar divisions between craftsman and artist, maker and user, and practical and theoretical aspects in both craftsmanship and design.
Craftsmanship and Design	craftsmanship approach in design involve a deep understanding of materials and tools, a commitment to quality, and a high level of skill.
Commitment to Quality	Design and craftsmanship combining skill, commitment, and judgment, establishes head and hand, man and machine, is vital to physical, mental, and societal well-being,

Table 2.1.1. The common aspects in the process of design and making crafts (from study no. 1)

2.2. Study No. 2;

This study aims to establish the characteristics of crafts that foster exchange and teamwork between "designer" and "craftsman" to create a potential innovation environment. It also tests the level of contribution to the innovation literature. The base principles of the design process and “making” an artifact are both responsible for solving problems, creating and other judgments taken through the process (Kristina Niedderer, 2011), it is possible to come across many cases in which new products are reached through collaborations in the fields of design and crafts.

The crafting process produces a finalized thing known as an artifact. On the other hand, designers do not always create final objects. The design process typically finishes with sketches, prototypes, and concepts (Sennett, 2008). identifies this as the primary distinction between craftspeople and designers. The table summarizes the distinctions between craft and design processes (Risatti, 2007).

The craftsman plays a crucial role in creating a distinctive product through a comprehensive approach. (Yair, 2001). Assumes responsibility for creativity as part of a holistic strategy. (Pye, 1995) defines the concept of "responsibility for creativity" through risk-taking, stating that the quality of the final product is constantly at risk during the artisan's process of making

	Craftsman	Designer
Product	Singular, handmade, unique object	Identical Objects, mass production
Material	Engages with the material in giving form processes	Understand the value of materials and their production method relation
	extensive knowledge of the related materials	
process	dialectic /Dialogical process (This process involves both idea-concepts and form-concepts in the hand-through-making action).	The conceptualization of form is separated between the designing stage and the making stage.
Prototype	The prototype is the artifact	"Prototype" is perhaps made to test design and production possibilities.

Engages with material in the process of giving it form

Table 2.2.1 Correlation between designer and craftsman (Risatti, 2007)

The study conducted the above table to declare that, the designer collaborates with mass production to complete the product process from start to finish. The discovered cases in this study also contribute to defining these qualities, focusing on cross-sector collaboration between craftsmen and partner firms. (KPMG, 2016) found that craft skills and knowledge have a substantial economic impact and may drive growth and innovation in several sectors.

2.2.1. Features of craft that can contribute to innovation;

2.2.1.1. risk-taking;

The concept of risk-taking in craftsmanship relates to innovation. Craftsmanship, as defined by (Pye, 1995)," is progress where the quality of the outcome is not predetermined but rather depends on the judgment, proficiency, and care of the maker". The study diagnosed three case studies to conduct a clear perspective, which is the risk-taking involved in the crafting process whether it's testing with materials or utilizing the knowledge generated by the craftsman plays a crucial role in driving innovation. However, this process also includes the chance of failure, further emphasizing the inherent risk in craftsmanship.

2.2.1.2. Holistic Approach in Practice;

Craftsmanship involves tacit knowledge, which is "the capacity to know something learned from experience" (Sennett, 2008). This knowledge includes "knowing what" (technical skills and physical actions) and (understanding how) (knowledge and experience related to material selection, tool usage, form creation, and method

selection). This holistic approach can lead to product development with technological innovation or aesthetic purposes.
According to the study, the understanding of craftsmanship has been transferred to a product or its idea, either with technological innovation or aesthetic purposes. These collaborations allow significant input for the development of new pieces.

2.2.1.3. Prototyping;

Prototyping is a crucial aspect of New Product Development (NPD), enhancing collaboration between craftsmen and designers. Designers use prototypes to test new materials, methods, and technologies before manufacturing. Prototypes serve multiple purposes, including problem-solving, idea generation, form creation, and communication enhancement, especially in multidisciplinary teams. The artifact, or the prototype, is created by the craftsman and plays a significant role in generating tacit knowledge. (Kristina Niedderer, 2011) explored this relationship and classified artifact production into several categories, involving testing or improving a particular method or technology, testing new materials, creative exploration, and understanding complex concepts. These aims align with (Schumpeter, 2010) scope of innovation, which contains of new products, processes, management skills, raw materials, and markets. Artifact creation allows for testing and knowledge generation, thereby fostering an environment that helps NPD. Craft knowledge created or communicated in these circumstances correlates to various stages in the innovation process.

Chart 2.1. The Outline of Innovation (cutler and company 2008)

2.3. Study No. 3;

The study Assessing the intellectual and executive features of local products nowadays, suggests that achieving craftsmanship in contemporary local manufacturing is more important at the constructing phase than at the designing phase. The study found that the craft involves a structure with influences shaping design and building processes, as well as mastery of the process. The findings suggest significant collaboration between intellectual and executive levels. The main hypothesis of the study is that craftsmanship in contemporary local production is more achieved at the executive level than the intellectual level. Craftsmanship is

present in many aspects of life and is a distinguishing feature of work marked by quality, great skill, precision, and mastery. “Craftsmanship is included in much of the thinking, design, and implementation” (Aitchison, 2018). Anything from parenting to programming. It can contain craftsmanship because it not only encompasses expert physical work but also helps the programmer, doctor, and teacher. It enhances both parenting and motherhood.

2.3.1.1. Craftsmanship in Low;

Law is a craft requiring judgment and respect to serve society (Scharffs, 2001). The quality of law depends on the clarity of its formulation, the intention of its writers, and the skill in its application.” Lawyers and judges use materials like constitutions, rules, and precedents, and tools like language and talents” (Peters, 2018). The artistry of law lies in the precision of the rule, serving stability and predictability. Mastery of these elements enhances quality, problem-solving skills, and effective use of resources.

2.3.1.2. Craftsmanship in Teaching;

Teaching is a profession requiring a blend of experience, knowledge, and critical thinking. It involves craftsmanship, reflected in the teacher’s expertise and their ability to navigate educational challenges, (Corrente, 2020). Key skills include problem-solving, decision-making, creativity, and understanding of educational tools. Professionalism in teaching involves applying technical, scientific, and artistic skills. The craft of teaching requires knowledge of tools and their application, understanding of the subject, and procedural knowledge, all contributing to teaching professionalism.

2.3.1.3. Craftsmanship in Fashion Design;

Craftsmanship in fashion design is about demonstrating value, quality, and skill in areas like pattern making, construction, and fabric manipulation (Berry,2012). It involves precision in detail, mastery in work, and creativity. The manual work distinguishes it from mainstream brands, adding value and originality to the outfit. Thus, craftsmanship enhances the desirability of the product.

2.3.1.4. Craftsmanship in Crafts;

Craftsmanship involves knowledge of the means to achieve a goal, transforming ideas into art, and skill in using materials (Scharffs, 2001). It's not just manual work; but includes experience, mastery, and high skills. Craftsmanship in crafts involves skills and knowledge to produce high-quality products. It's associated with good design, planning, and implementation, requiring creativity, precision, and

attention to detail. It adds value, innovation, and uniqueness to the product (2012, Klamer).

2.3.2. Attributes of craftsmanship in architecture;

Based on what was conducted in the study in terms of definitions of the term craftsmanship and its meaning in many disciplines, as well as its attributes and unique features. Each contains a set of components. until a set of the most important components of craftsmanship in architecture is reached.

2.3.2.1. Experience;

Experience covers everything a human knows and can do in the broad scope of his employment(T.M.Amabile, 1998). employment performance and experience. Craftsmanship is closely linked to work, as satisfaction and dedication are more vital than time spent on the task. The engaging process of producing high-quality physical products through artistic expertise. Craftsmanship necessitates few qualities: knowledge, skill, and competence. Knowledge of local construction traditions, materials, new technology section, culture, climate, and location are all necessary components of craftsmanship. Skills are developed. Competence, as defined by a combined practical approach, is the designer's intuitive capacity to recognize the properties of materials and their inherent abilities. Having experience in a production plant can lead to innovative ideas. The element consists of existing notions that require prior knowledge
(2020, Ababneh-Al). An expert is described as a person who has acquired knowledge and abilities in a certain sector and gradually utilizes that knowledge. To master any type of activity, ten thousand hours of work and expertise are required to perfectly control the work, it is about creating something that can be seen, heard, touched, or used (Forker, 2015).

Figer 2.3.2.1 The Baghdad main bank in the Karrada-Baghdad (the proposal design and the constructed structure)- by the study no. 3

2.3.2.2. Skills;

Craft skills, as defined are manufacturing methods that merge technical knowledge and practical know-how (Modest, W., Cummings, C. Woolley, M., Sabiescu, A., Waelde, C., Konniger, S., Wippo, M. and van Dijk, D, 2015). These skills are honed through manual processes using hand tools or machines, leading to the production of high-quality artifacts. The act of design plays a crucial role in enhancing these skills. The initial drawing and re-tracing of craftsmanship are central to design, and architecture necessitates craftsmanship. Specialized skills are required in the production process itself, demanding a high degree of skill, knowledge, and coordination (Roosi., 2017). (Aitchison, 2018)

2.3.2.3. Perfection;

Experience encompasses all a person knows and can do in their work field. Craftsmanship, directly related to work, involves creating high-quality objects using knowledge, skill, and competence (Herres, 2014). It requires an understanding of local traditions, materials, and technological advances. Skill is developed through practice, and competence is the innate ability to understand material qualities (Forker, 2015). An expert applies knowledge to solve problems. Mastery in any operation requires an estimated ten thousand hours of work and experience.

Figer 2.3.2.2 The public library building in Samawa city (the proposal design and the constructed structure)- by the study no. 3

2.3.2.5. Creativity;

Craftsmanship is the process of formalizing embodied form that results in the creation of a creative product (Dominiczak, 2015). There is a great connection between craftsmanship and creativity. This relationship is based on the fact that both creativity and craftsmanship are ultimately based on the shared engagement of the individual and the world. In the process of thinking and implementation, the

concept of creative things combines both (Roosi., 2017). It also frames creativity in terms of discovering solutions

It is understood as a process that occurs within the human mind and leads to the production of an innovation or a new and useful product, as it is a luxury that It respects and seeks through its activity to promote skilled working techniques and produce useful products and innovative solutions (Dominiczak, 2015). Includes

Creativity has three components through which a product can be judged whether it is creative or not, and they are as follows (Mahdavinejad javad M., 2015) (Jagtap, 2019)

2.3.2.3.5.1. Novelty;

Novelty, an essential element of creativity, is the unique intellectual and expressive difference of a product. Understanding form, the new creative message, is about adopting a common language, not a specific message. It's about embracing a space for interpretation rather than a final interpretation. Novelty extends beyond form and is tied to the originality of the idea being expressed. A new form represents a new idea (Antanios, 1998). It signifies the generation of ideas that are specific, rare, indirectly connected, and distant from the norm, resulting in unique artistic production and ideas that are new, rare, and seldom repeated (Jagtap, 2019).

2.3.2.3.5.2. Originality;

Intellectually, originality is the ability to innovate and generate unique ideas, often challenging norms and using innovative methods. It signifies the quality of ideas and their far-reaching impact (Mahdavinejad javad M., 2015). Formally, authenticity mirrors modernity while preserving identity, especially in architecture. It involves creating modern structures that maintain architectural heritage. Authenticity must be useful and new, retaining valuable aspects of old ideas while adding innovative elements for greater efficiency (Said Abdel Basset Barbakh). Creativity involves three components: novelty (new or daring productions), value (beneficial and functional products), and originality (unfamiliar, innovative products linked to heritage).

2.3.2.3.5.3. Value;

Creativity researchers distinguish creative ideas from mere novelty by including the concept of value, insisting that new work is intentional (Harrington, 2018). Value implies similarity with previous work, evoking connotations for the recipient through single or multiple references. This is achieved by adopting formal references, regardless of their associated meanings, that align with the designer's idea and the project context (Antanios, 1998). An idea is not creative unless it holds value or receives a positive evaluation (Sefertzi, 2000)

Implementation Aspect	The Intellectual Aspect	The Performative Aspect
		Experience
Perfection		
Quality		Skills
Creativity		
Novelty		
Value		
Originality		

Table 2.3.2.3.5 Components of craftsmanship and the aspects that each component focuses on.

2.3. Analyzing and Results;

The studies each discussing and presenting strategies and properties of taking the approach with practical case studies to prove their ideas and claim. The studies give a wide frame of the approach, which crafting involves a structure with influences shaping design and building processes, as well as mastery of the process. The findings suggest significant collaboration between intellectual and executive levels. Strategies as use of local materials and methods can enhance the connection with the environment, making value. The studies discussed in this article all aim to contribute to innovation, quality, practice strategies, and common values in the path of design process. Below a table summery understanding of the studies and each studies claims and goals.

	The studies claims and goals	Notes to determine
Study no.1	The study claims the importance of ethics and personal value in the process of "making" which can be more adaptable in the craftsmanship approach. The book also connects material consciousness and these ethical values that resulting a quality product and also relates this approach to the well-being of the designers.	The study may be worked more on individual and societal levels of dedication, and the desire of doing jobs well-done, implementing the spirit of the approach. This could be not applicable on the level of massive facilities, that systematic obligations require to find a constant, basic impulse of quality production.
Study no.2	The study conducted the features of risk-taking, holistic approach, and prototyping in the process of contributing innovation in the design process, especially in mass productions, considering the craftsman approach, with Knowledge of materials, Production, and Application. The study claims the importance of knowledge in the process of design	The study narrowed down the craftsmanship approach in certain instances as New Product Development (NPD). Which may contribute to more domains. cases, the contribution of designer and craftsman stands only at the level of "knowledge about production"

Study no.3	The study suggests that achieving craftsmanship in contemporary local manufacturing is more important at the executive level than at the intellectual level. Craftsmanship in production strengthens and enhances intellect more effectively. However, the in-depth effect lies in the design process. The most influential and effective part of the components of craftsmanship is the component of intellectual mastery designers reach the level of achieving novelty and integrity and give to the product.	The study relates the craftsmanship with the executive side only, but the intellectual side must be included as well, and mastery must be achieved together.

Chart 2.3.1. Analysis of the three studies

Conclusions:

● Craftsmanship design strategies can be achieved through getting inspired from traditional architecture, crafts, and also from close insights to natures creatures.

● The findings suggest significant collaboration between intellectual and executive levels

● Craftsmanship approach integrated with effectiveness, well-being, and high performance of the users.

● Efficient design could be maintained by holistic consideration of quality and individual fingerprints in designing buildings, services, systems, and products.

● Focusing on a crafting design strategies approach will lead to more aesthetic and ethical features in the process of producing Design solutions that societies forget have existed before in our traditions.

Recommendations:

The following recommendations are a few strategies that may be used to promote originality and designers' fingerprint in the design process:

- More understanding and more knowledge of material characteristics and the techniques that fit each material, before putting it to usage in the process of construction.
- Architects must take into consideration traditions and individual fingerprint firms at the beginning of the designing process.
- Introducing architectural students to crafters working with natural materials may widen their points of view at the beginning of studying design.

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