

Article title :

**The Role of Drawing Representation on Visual Perception in
Architectural Design Process**

By

Bestun Hussein Mohammed

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The Role of Drawing Representation on Visual Perception in The Architectural Design Process.

Abstract

The drawing appears to be a valuable source of information (insight) about the knowledge that architects employ. Drawings are inextricably linked to designers. Designers employ representation (drawing) as a method for conception and observer influence. The conceptual representation is made up of imagination and interpretation (perception), while the product representation is made up of sketches, drawings, oral presentations, models, and graphical representations. This research aims to gain a thorough understanding of how architectural drawing shapes mental processes. The designer's mentality toward the creation of architecture is formed in part by this perception. The aim of this paper is to examine how designers use drawing to visualize ideas inside the field of design and architecture cycle, how thought and how it influences the observer (visual perception) to move information and ideas, then product expression.

Drawing has been used as a structural technique (tool) or method to methodologically grasp this system of interpretation in a visual way and to promote awareness, i.e. for design analysis. Context, socioeconomic status, education, and other culturally related items are only a few examples. Architectural design is a representation (symbol system) whose purpose is extracted from the society's and viewer's shared perceptions of the drawing within which it is created. Shared perceptions and visual processing (in their different forms and destinations) are reached through a particular process of ordinary people's meanings integrating. specialists, and maybe the designer himself. Seeing as meanings and visual perception are usually beyond the designer's desire, hope, or power, a technique has been proposed in which the designer participates in the thought process and passes experience via seeing and awareness (visual perception).

As a result, the designer will be better able to build a functional environment design the aim of this project article is to provide a wider look at the fundamental concept of drawing ability and how it influences visual perception. Methods In this study, Visual data from having drawn was used in this study to better recognize how representations influence people's views of architectural scenes. The outcome, all forms of drawing were found to disperse and concentrate attention relying on the means of illustration in comparison to others and, as a result of the reduced background information, to decrease the change in attitude in response to scene changes.

Findings, drawings should be seen as a language or doorway into the designer's mind (create imagination , what designer know , how designers think) , with the architect's awareness system and method of conceptual representation having an effect on the spectator (convey knowledge and make a communication between them) .

Keywords: Architectural Design, Drawings, Perception, Visual Perception, Representation.

1 - Introduction

Drawing is a process of consciously develop and mentally creating, recognize knowledge and shaping, and the ways to convey it externally. This method includes manual processes such as drawing and imaging in addition to simply expressing in visual terms (photography, collages), or the ability to create. Rather, it employs these skills as a means of thinking, conceiving, seeking, and presenting ideas or concepts. Imagination is, in reality, the road to design . Today's economy relies on awareness and knowledge, those who are active in the visualization process are more likely to be able to form complex knowledge into multiple chances. Drawing and creating were historically key assets in this phase, as they stimulated mental correlations between the brain and external reflection this permitted for a more dynamic mechanism of problem-solving and interpretation via representations was especially important educational, where learners respected and encouraged students to draw and create. However, in recent periods these drawing experiences have been confronted by modern technologies innovation design schools or departments, programs, and workshops in the design process in all fields can see a rise in the number of learners who lack critical thinking and visual literacy. and imagination, while still knowing how to use a variety of software applications. (Schön, 1987)

representation and visibility in design aid a person ameliorate, observe, interpret, and assess design concepts during the design process, By promoting a strong value from the viewer Previous studies on design expression has tried to find its purpose and practice guidelines in a variety of design situations and has discovered that drawing works as a conversation between psychological(mental) and external representations (imaging) (Schön, 1987) , the presentation process play a vital role within an important position in communicating subsequent expansion and design intentions (ansen, 2011) , The position of presentation in architectural practice is distinct from that of other art and design fields in that the whole process is carried out using representing press (emphasize reiterate and repeat) . drawing has been the target of research in response to perception attempts to reconcile responses to representations with real environments or visualization. studies on visual forms' ability to evoke specific emotional or analytic replies (MacFarlane, 2009) .

when many visual perception studies have assessed or compared reactions or answer to intended representations, the majority of the techniques used were empirical perceptual procedures. ,which identified statistical differences relying on voter rating for precision, rationality, level of detail, commitment, and completeness (Sheppard, 1988). While this procedure was useful in linking different interpretative aspects to a representation's reputation findings did not lead to any real criteria for visual perception processing. In other ways, recommendations for better architectural representation options, formation, and aiming, as well as the visual conditions that facilitate such a statement, have not been thoroughly investigated. The purpose of this study is to discover how people interpret things in a different way by defining the characteristics of representation that influence the viewer's interpretation (impact of drawing on visual perception). (Goldschmidt, 2005) (Downes, E. 2010)

Research problem: One of the issues we face is that designers create a variety of different types of drawings for a number of purposes. Any one of these styles of illustration has its own personality and function.

Accounting for the correlation between outer representations and internal emotional structure is a significant obstacle. Even if you don't understand the content of the sketch, this assignment will help us recognize it.

The issue with representations (drawing) communicating is that significant confusion will occur unless the observer (visual perception) understands how to perceive the drawing components. because awareness about drawing styles is generally implicit rather than specifically addressed. creative (designer or architect) can easily fail to convey information to everyone as correctly as they thought.

The Aim of this paper: based on the identified problem field, this study aims to provide an overview of the concept of using The Influence of Representation (Drawing) on Visual Perception in the Architectural Design Process. (to analysis or investigate why or how architectural drawings could influence or enhance visual perception), (**easy communication between designer and viewer**) (**thinking**) (**transfer knowledge**)

The Importance of this paper: is to make it easy for the designer and the viewer to communicate (thinking) and (transfer knowledge)

Research Question: How do architects use Representation (drawing) to facilitate contact between designer and client – user- team group (Visual Perception) and information transfer? Or The questions asked could help in a better understanding of how to design drawings that can be used in creating visual perception and how drawings can help with easier communication and information conversion from designer to audience.?

Research Hypothesis: In architectural design, representation drawing has a significant impact on visual perception.

Research Methodology: Methodology that is descriptive and is based on many analyses of previous research papers.

Summarize: Drawings must be seen as an entrance into the designer's mind to active the imagination aspect in our mental, with the designer's information structure and process of conscious experience having an impact on the observer or viewer (visual perception).

۲- Data collection and Methodology:

This review paper provides data in (study, book) of academic and applied publications concentrate on The effect of Architectural Design (Representation) on Visual Perception. The process of review requires some steps as follows: Firstly, We conducted a main word search in the online databases to obtain the papers to find the journals and meeting conferences that have published similar studies. we consider only the (paper, book) published in the proceedings that have been quoted by the established articles. individual searches were carried out in their network to gather the papers to be reviewed. also searched for this area that was cited on the Web at least once (Google scholar or gate, etc.) and found those applicable to Repres. on Visual Perception.

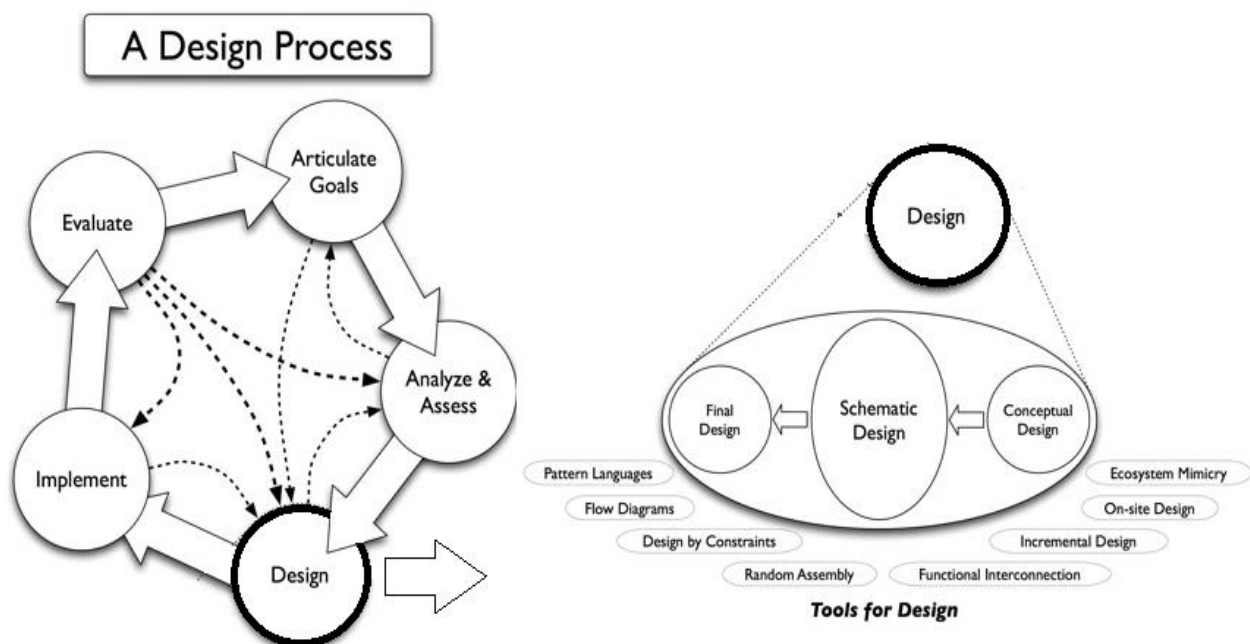
Research Methodology: Descriptive methodology is based on several reviews of former research papers. Methodology, we specify the scope of the study and recognizing keywords used in the database for searching .next, gathering of papers or books inside the framework of this paper. After that, analysis of content and the study Representation and Visual Perception discussed in the papers are described as they refer to both elements. At last, data collection analysis and the research breakthroughs discussed and in compared the papers are described as they refer to every Representation and Visual Perception, discuss the research gaps found or the ideas for studies outlined.

۳- Background

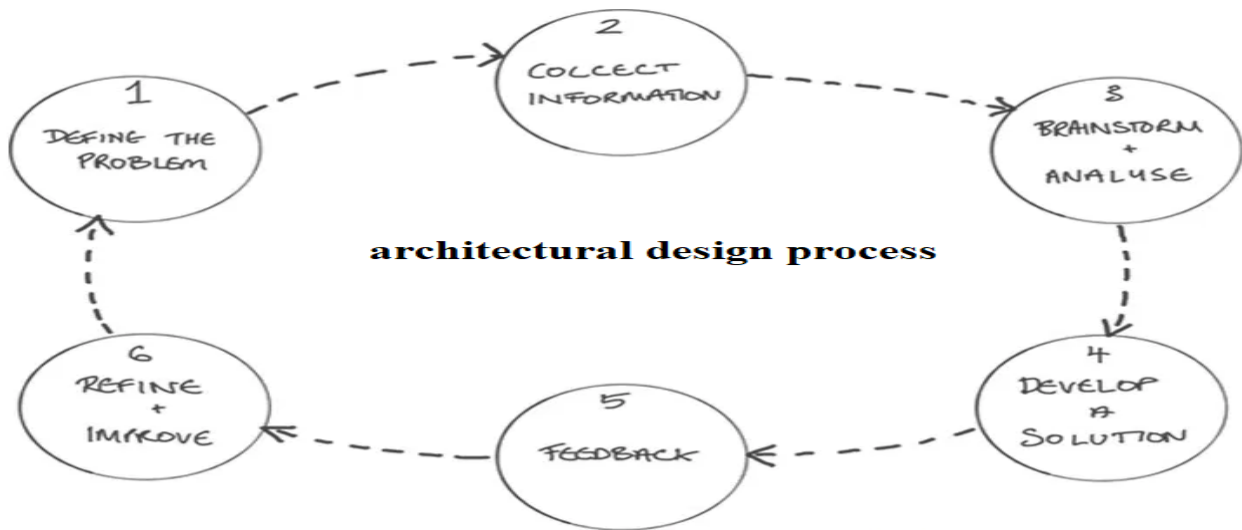
Before beginning a review for a paper, it is essential to have knowledge of key words and to examine the following:-

۳-۱ **Design:** in commonly speaking, It is the mechanism or process of imagining and arranging the formation of items, integrated structures, vehicles, dwellings, equipment, and other objects. It is designed with the consumer in mind (the center is a user), implying that consumers are at the core of the design mental process. It really is about finding creative ways to solve a need or an issue for individuals, physical objects, or more abstract structures. This highlights the significance of design thinking and techniques (processes) in the development of new creative goods and services., for instance, multiple sensory (visual and spatial connectivity) is key in design and development (production) Drawings and sketches are powerful tools for supporting and encouraging development production throughout the system development cycle (imagination). All sorts of visual expressions are special since they represent the presence of objects language has nothing to do with it. drawing may help as a team's popular guide. However, to be able to interact through a drawing or sketch, the imply of verbal communication is required drawing -an essential part in design processes or procedures able remove communication difficulties and problems as far as the group members involved during the conversation are the same.

(Pre-Design, Schematic Design, Design Development, Construction Documentation, and Construction Administration are the stages of the design process. These stages do not follow a strict logical sequence, but rather overlap and interact in a variety of ways).as shown in follow fig.



In contrast, in handover conditions., newcomers (team members) will perceive the drawings variations because of a difference in pre-comprehending and grasping. This is due to the fact that images are ambiguous and can be perceived in a variety of ways.; therefore, the drawings must be integrated with knowledge. (KRESS, ۲۰۰۱) (ERIKSSON, ۲۰۰۴)



۳-۲ Architectural representation:

In order to define and describe design (projects) decisions correctly, Designers must imply often depend on representation drawing strategies instead of words. It's a necessary part of the processes of design and works anyplace.

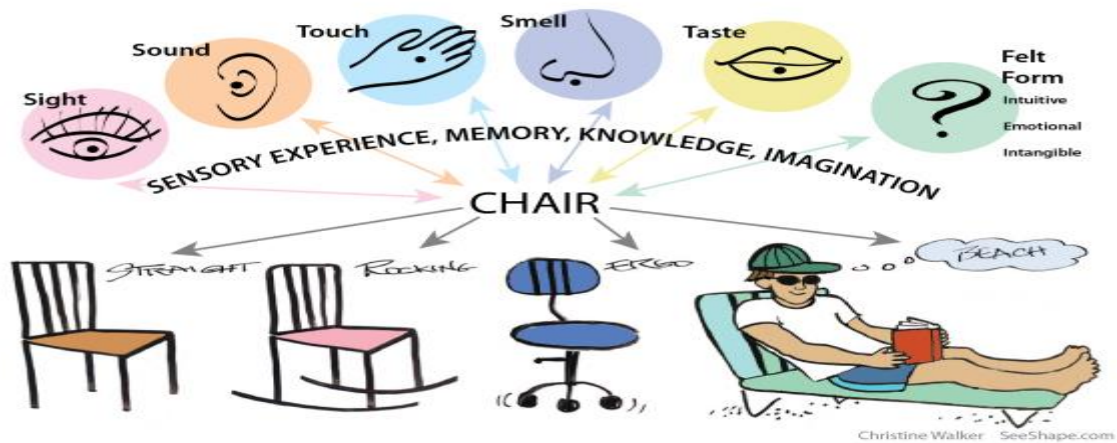
۳-۳ Functions of architectural drawings?

Convey and Impart visual knowledge about architecture and design. This is undeniable. They can do a lot of other stuff, for example (ideological, moral, political,...., etc.), They could represent the personality and identities of those who create them, using any tools (charcoal, brush, pen, or software program) do so they could the ability to encourage and provoke. They may be rational or sensational in design fantasy. or designer's drawing is a technical drawing of the project that comes under the meaning of design. Designers or architect use drawings for a variety of purposes:

- to transform a design concept into a cohesive framework (generate proposal),
- to formulate concepts (communicate idea),
- to persuade clients of the value of a project(design),
- to assist a builder in constructing it according to the design purpose or intent,
- as documentation of the design process and development ,
- to create a record of an existing structure.

types of drawings Even a cursory examination of architects' sketches will demonstrate that there are a variety of different forms of drawings involved. the first stage in enhancing our understanding should be to try to classify designer drawings. kinds of drawings are (presentation, instruction, consultation experiential, diagrams, fabulous, proposition, and calculation) drawings. (Lawson, ۲۰۰۴)

۳-۴ Visualization: It is Any method for making images, drawings, or motions to convey a meaning or a message. Visualization and mental language have been an important way to convey both abstract and ideas, Since the beginning of time. E.g. from history contains Cave drawings, hieroglyphs, Ancient architecture (greek, roman), and L. daVinci's innovative ways of technical painting for architectural and science purposes. Now, visualization has a growing number of applications in research, learning, and engineering. (physical product visualization), Medicine, media, and etc. the typical or standard of a visualization app. is The field of digital imagery (computer graphics). The creative of ۳d graphics is perhaps the most progressive step in visualization that since the Revolution era's development of perspective. The progress of visualization was also aided by the creation of anime (move). (Wergles, ۲۰۰۹)

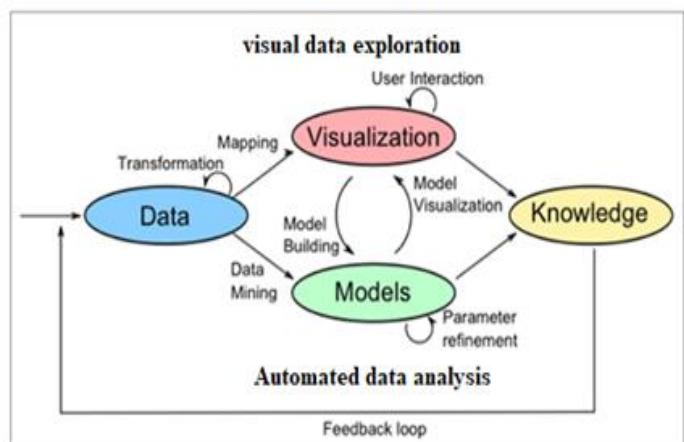


۳-۵ Understanding Visual Needs:

Drawing is a natural talent that is often stifled in early life(childhood). As a result of their sometimes erroneous perceptions of targets, adult students are often afraid of drawing. When most people think of drawing, they thought of it from either an imaginative (artistic) or a technological viewpoint Beautifully drawn works of art or extremely detailed formalities always leap to mind. Many people who want to interact visually, however, have objectives that come somewhere in between these two extremes. Architecture drawing is a more supportive method to their objectives. By putting drawing in the sense (context) of a mechanism for imagination and efficient communication, The ability to convey

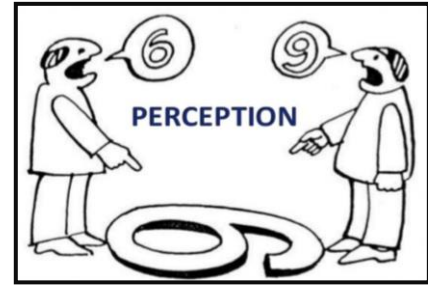
knowledge without excessively realistic evaluation of artistic or technological quality becomes essential as the clarity of the concept becomes essential. This allows Unpracticed drawers to establish confidence and skill in visual thinking and presentation.

visual analytics process



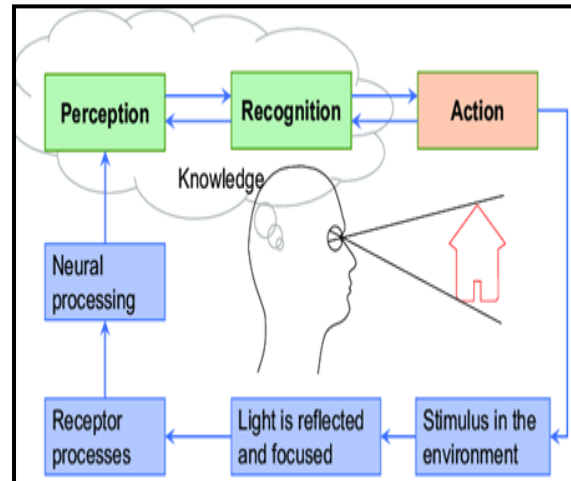
३-६ Perception :

Perception (Perceptio is a Latin word that means "collecting" or "obtaining" is the process of arranging, defining, and appropriate equipment data in order to reflect and grasp the data or situation that has been provided.



Signals travel through the nervous system in all forms of awareness (perception), which, in effect, are the outcome of visual processing stimuli (chemical or physical). such as, Light hits the colored part of the eye, creating vision. odor molecules are responsible for the perception of a smell.; Force vibrations (waves) are included in listening or hearing. (Goldschmidt, २००९)

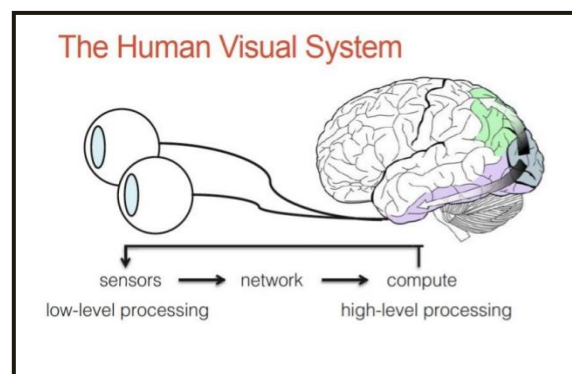
the perception process starts When my five senses (sight, ears, tongue, smell, and skin) interacted with external stimuli (sights, audio, flavors, smells, and fabrics) in surrounding us . We are presented to an unlimited quantity of signals via our sensory system, which some we give importance to and others to which we simply shut down. Those that catch our focus are analyzed and interpreted relying on our cognitive and behavioral process parameters. Many of these signals become modified across period, and we begin to notice their importance.



Perception is more than just passive receipt or finding missing signs., but it's formed via the receiver's learning, mind (memory), forecasting, and interest. Visual perception is a method of converting low educated into higher-level data. for instance, Extracts forms for object identification and recognition. Regarding that, an individual's ideas and forecasting (or understanding) are related to restorative and select processes (such as focus) that impact interpretation and perception. Perception relies on complicated (complex) roles of the brain (nervous system), it seems to be largely effortless subjectively. since this growing problem outward of conscious consciousness. (Lawson, २००९)

३-७ Visual perception :

it is a process mechanism of recording visible sensory input as conscious experience (meaningful).. as per Barry , A perceptual methodology to vision linked uses grasping and knowledge of the processes comprising the system of sight(vision) and studying how they operate; consciously and uncons. place them on the development of behaviors and ideas. (Ghosh, २०१०)



Visual perception is the capacity to recognize the ambient environment utilizing emitted light reflecting light by the environment's objects. It was distinguished from visual acuity, which relates to an individual's right to see clearly.

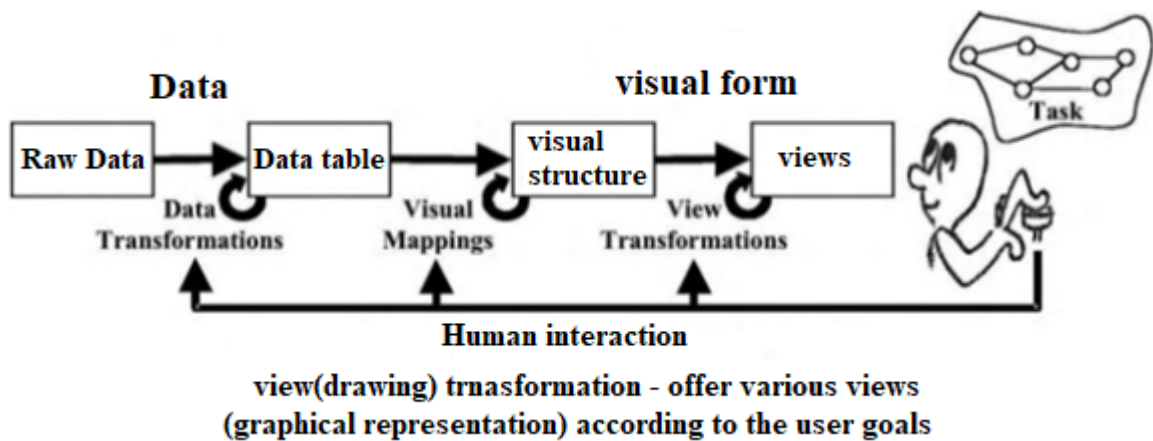
Vision, sight, or eye view are terms used to describe the subsequent perception. The different physiological elements involved in insight are revealed to the entire (overall) as the visual system (human eye) and are the concentrate of many studies in the field of languages, cognitive, psychology, and genetics, all referred to as vision science. (Lawson, ۲۰۰۴)

۳-۸ Visualization System Within Architectural Design Process :

visualization system begins at the very beginning of the design process, the process of Idea generation, development stimulation, element collection, and design result include Different kinds of visualization in regards to design operation in vision e.g. in design the conceptual step include mental imagery whereas design progress deal with the concrete aspect of the project. The architect thinks on how to create the layout of work (design) and technically show it to the user or client and the team worker (designer). The designers (architects) normally employ drawing as a tool of representation between architec and teamwork. Drawing or Sketch is a method of visualizing an architect's concept, in which the developer shows the drawing as a potential design solution., so other sides could link between (solution and needs) in design requirements (Lawson B. , ۲۰۰۴). We can teach from Lawson that Architects utilize drawings and detailed drawings to reflect their design expertise to the project team. the visual design process in design involves they are sensitive to the presence of objects and environments, It is, of course, a given. Needless to say, the visual qualities of their design items are, within operation no cases, of significant value to clients (users). Therefore, it is unsurprising that visual details are a development process(design also assumes that developers think visually, which implies that the representations that help them feel are mostly made up of forms rather than words. (Gero, ۲۰۰۷)

۳-۹ Visual Representation In Architectural Design Process :

Designers create, develop, interpret, and show their innovative ideas(design) the via drawings., text word and oral represent, explained that creative ideation and thinking is an operation that converts an indirect original idea into a clear and meaningful concept (idea). “...idea generation techniques, like brainstorming, are commonly applied by designers as a means to come up with original design idea”



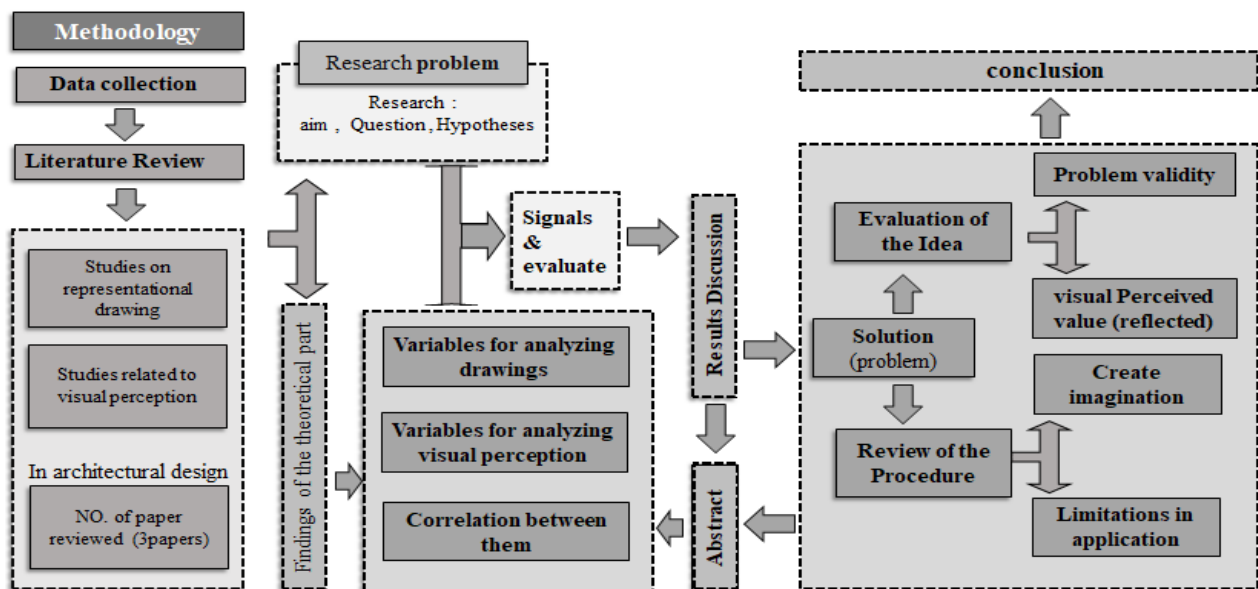
There is strategy or mechanism designers utilize to makes it easier from one step of idea creation to the next level. We are uncertain about the procedure architects employ for concept creation, which I believe is a method of evolving an idea from its emergence to its final design level. Drawings like show stimulation strategy or tactic (Paivio, ۱۹۸۷). Smith clarifies and shows that Architects employ sketches to develop and shape their ideas, so drawing (sketches) as per (v. der lug), assists the developer in receiving the best possible outcome for his work. The process

and method of making or improving an idea are critical to its success. sketched as including more definition or context "ambiguity or indeterminacy" . However, I believe that the process aids the architect in creating something creative and realistic. Recognize the repeated procedure to be an interaction, and it may also assist the architect in developing ideas.

they declared "...the interaction that designers have with their sketches is seen as essential to creativity in design activity" . sketch Illustrations are also a means of visual presentation of adjustments in levels while the creator is creating ideas so that the product becomes what you expected it to be, Sketches are models that architects use to realize their project needs. (I.Verstijnen, 1984)

4 - Literature review

This paper tries to find the influence and role of drawing on visual perception in the architectural process. Four different papers were reviewed concerning the representation and perception that could face this process. In this study we review and analyze this paper:-



Article - 1 -

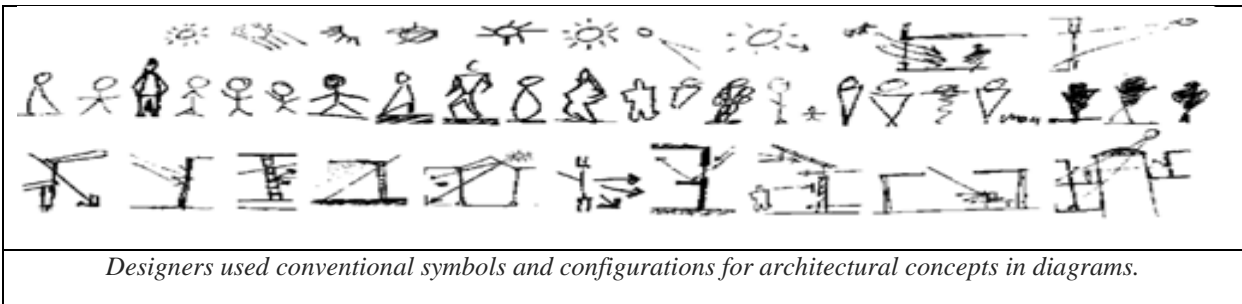
“ Inferring design intentions from sketches an investigation of freehand drawing conventions in design ” (GROSS, 1991)

The objective of this research was to be certain that architects employed drawings to explore concepts and influence on visual perception (user) for solution issues. they view research studies of the utilize of drawing in architecture, including the correlation between both vision (perception) and drawing symbols. The represent or explain An empirical research on drawing for the layout of a designer's workplace. He discovers and found that architects utilize draw on a variety of techniques when discussing thinking about various design challenges.

They are implementing a sketch drawing method or program to recognize and understand these drawing patterns and provide sufficient recognition information aid for the task at hand. architects may utilize traditional sign and symbol representations. due to their architecture and design training. lessons about visual and thinking educate pupils to utilize symbols drawing for showing.

for example, Dondis mentions in A Guide of Visual Literacy that visual media include "points, lines, and forms," as well as "orientation, sound, light, pattern, volume, depth, and motion." . Similar manner, Laseau indicates that drawings are made up of "personalities," "links," and "modifiers" in Graphic Design. he drew a variety of forms or shapes, including squares, triangles, blobs, and circles and crosses to highlight potential "primary symbols"

He suggests that these symbols can be put or replaced by digits, words, or other logos. Relationships, a series of events, motion, and mechanisms are all represented by lines and arrows. modifiers utilize scale and color, To build focus, It's not shocking that architects employ drawing norms in their practice. (Lawson, 1994,)



Article - ۲-

“ Visualization in the design process: introducing two and three dimensional sketching techniques to enhance creative thinking and communication”

(Anderson, ۲۰۰۴)

The aim of this first partnership between both (C. Mellon and Ohio State)University, as explained in this article, was to help architecture pupils think visually by involving them in drawing and modeling activities. by using design techniques drawing , Particularly during the idea and growth or development process, Students may improve their ability to generate new ideas and provide further assistance throughout the design process. Furthermore, if it is developed beyond a (۳ week) duration to be completely integrated into a curriculum. (program), the effect of visualization will be stronger.

students were extremely well received to the equipment (tools), lessons, and tasks offered They immediately established and developed the ability (skill) to express basic forms in realistic sketches, and then quickly transitioned to employing drawing as a method that mirrored their mindset and thinking. Their progress was most remarkable .The majority of the time, Their drawings were usually dynamic and their ideas were diverse. They noticed and felt in a short period that they were could demonstrate various concepts via drawing and that they had in reality recorded a large amount of effort as confirmation and evidence. their end ideas were creative, interesting, and persuasive As creative ideas (concept proposals). Examples of work are shown in figures (۱-۴).

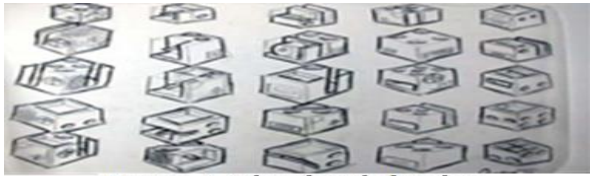


Figure 1– Thumbnail sketches



Figure 2 – Process book



Figure 3 – Final drawing & model



Figure 4– Class models

Article -۳-

“ The impact of design representation on visual perception: comparing eye-tracking data of architectural scenes between photography and line drawing ” (Park, ۲۰۱۹)

In design, presentation is critical because the majority of the system design is spent expressing information. Representation research (previous) have utilized questionnaires to highlight the link between representation (validity) legitimacy and high-level attributes qualities including precision, realistic, and connectedness. but it has only a minor effect on how people understand and create presentations.

Methods In this study, Eye tracking information from (۶ sets) of pictures and pencil drawing representations were employed to investigate how representations influence human's perceptions of architectural settings.



The influence or role of the viewer's background(educational level) and response to a transition in the provided scene in architectural was also looked into.

Participants: A group of ۴۰ students received data for this study.: ۲۰ architecture-related university students and teachers (major group) and ۲۰ students from other branches (non-major group)

Results : Consequences In compared to pictures, line drawing was discovered to spread and focus attention depending on the technique of representation, minimizing the focus gap between main and semi groups. and, as a result of the diminished prior knowledge, to minimize the transfer in concentration in response to scene changes. (contextual details or information)

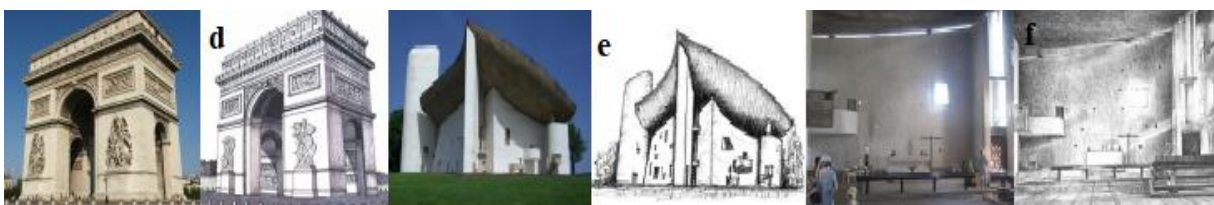
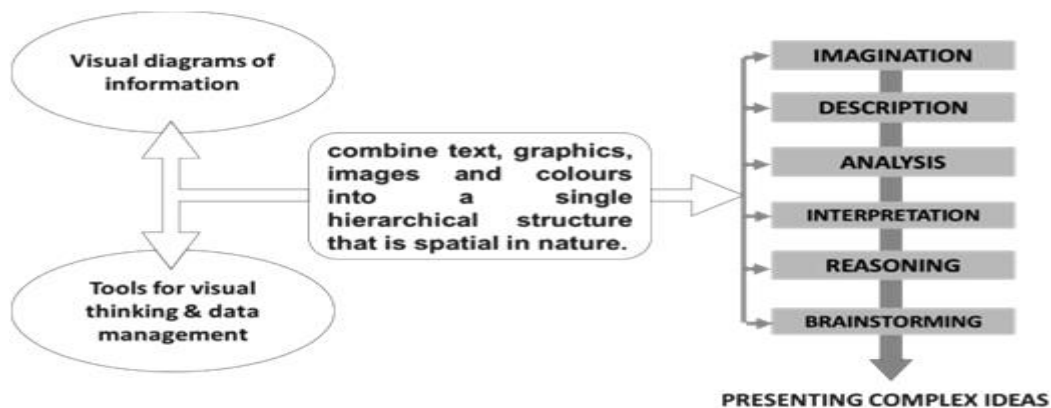


Photo and pencil drawing image pairs Modifications in the architectural context are being simulated.

Conclusions Final Thoughts While this research suggests how technological means can be used to reduce representational gaps, we also suggest that line drawing has a great ability as a shared cognitive field for more open discussion.

• - Result and Discussion

undoubtedly, human or student visual perception is a crucial issue in design and architecture. It is because awareness (experience) and memory are primarily focused on knowledge gained through visual perception, and it is an essential characteristic of design trying to develop a system of human vision is a topic that is central and related to the design process. as it may support in promoting awareness of the perceptual consequences of project outcomes and decisions in the design process. Human perception is difficult to model since it requires more than just the eyes, but additionally the mind and memory (consciousness). the last seeing and viewing occurrence happen in the mind. Brain systems and procedures are to answer for a normal occurrence that we face almost every moment. Despite the fact that it might stay unnoticed: We tend to forget such items or things (drawing) in our surroundings, Despite the fact that they are visible to every one of us. This site (vision) observation and experience are clear to confirm or easily checked. When we look at a drawing case or situation for a specific time and then attempt to recall the things or elements that make up the scene (we do not keep in mind them all).



Knowledge and experience has an influence on the preferred mental-mapping strategy (memory and imagination) in the design process (linkage between representation and interaction - perception)

they would take into consideration the issue of experience. Experience access vary kinds and amounts of knowledge and creating more comprehensive (extensive) utilize of this knowledge during period of investigating the implications of significant source (knowledge) into the procedure by interpret of drawing and influenced on visual perception (client-user-maker). Knowledge and experience is focused to differ not only in terms of sort, amount and style of utilize but also in terms of its link (interconnection) in comparison to beginner. This connectivity makes it easier for professionals to reach information stored in long-term memory.

Table shows the study explanation

Reference	Content	Reviewed	Result
<i>(GROSS, 1997).</i>	The study dealt with many tasks of manual drawings in the design process, and pointed to its role in exploring and analyzing the site and generating ideas and developing them and communicating through them, and their role as a store of ideas and gestures Painting and its reference points, which inspire the designer as a leading record and primary source, and its role as a useful approach to meditative practice, Particularly emphasizing its role in bringing about literal transformations in the design process	The study reviewed the view that drawing A modus operable that has some functions: collecting sensory impressions, creating everyone, discovering and formulating problems, trying to solve problems, "organizing", and communicating with others.	Accordingly, a study that generally reviewed the role of drawings in the process of thinking about the design problem, but focused in particular on its role in transforming the design idea without focusing on other aspects.
<i>(Anderson, 2004).</i>	The study examined diagrams and illustrations as part of the interpretation supported by the drawings , In content, focused on the applied skills of graphic-supported thinking in the design process.	The study focused on the role of thinking using drawings as a communication mechanism in three contexts: the individual, the team, and the public.(make or achieve a positive perception through sight and transfer a good knowledge between them - how designer think)	Four concepts were put forward that could be counted as manual drawings, namely: Analysis , Exploration , Discovery , Verification
<i>(Park, 2019)</i>	The study considered that the role of drawings in the design process ranges from drawing for design to drawing for visual perception and communication.	For the design drawing function, the study indicated the ability to think by using conceptual illustrations to choose possible solutions on paper (drawing as atool to solve issue andmake a link between them),	they pointed out that the role of manual drawings revolves around the following objectives: <ul style="list-style-type: none"> · Record ideas instead of trusting memory. · Maintaining the path of ideas. · Transform ideas from minds to represent future reality. · Allow the expression of creativity. · Allow change before change becomes taboo and costly. · Get the final customer authentication.

The research founding : that the role of drawings is particularly focused on Its role as a tool for design thinking , its role as a tool for visual perception (communication) , its role as a tool of interpretation and explanation, as follows:

١- **For her role as a tool for thinking.** The research found that drawings representation are the main means to think about my design in both conceptual and sensory types, The main behavior was to generate the design idea primary through its role in exploring the site, Generating ideas, development, analysis and communication. Where Serves the academic objectives of the

curriculum. drawings are emotionally comfortable and influential in create the idea for both solo designers or design teams, And help the designer to show and understand Environmental expertise and enhanced different sensory perceptions (visual) of design development, Giving concrete incentives to the movement to think. It is an appropriate strategy for resolving design issues , It highlights its role during the stages The initial design process of both:(٢-phase shows below)

Exploration phase: In it, the role of drawings representation emerges as a tool for analytical thinking and thinking. Retrospective and meditative thinking , which aims to expand and stimulate the designer's thinking through diversity Ideas and alternatives presented simultaneously , and focus the designer's attention on public issues instead of Details.

The completion phase: The role of drawings revolves around their ability to enable the designer to Investigate a number of alternatives quickly, accurately and efficiently, as well as their ability to test primary solutions resulting to show its efficiency.

Development phase: Highlights the role of drawings as a tool for literal transformations that actively contribute to the circular process of reinterpretation to new interpretations, and to the achievement of unexpected discoveries to innovation .

٢- **For its role as a visual perception (communication tool)** , The research concludes the importance of representation (drawings) as an external memory for storing Ideas , And as a communication between the architect and himself, And between The designer and the design team, and between the architect And the general public (client ,user and maker) .

٢- **And as for its role as a tool of interpretation and explanation.** The research found the effectiveness of this role in detecting Designer's Purposes , representation drawings are a tool used by both the designer and the analyst to interpret both the content of the product on the one hand and the design method used to reach the product on the other.

٢- Conclusion

We look at the drawing as a medium that creates possibly strong imaginative participation if visually solution in a special method. on the other hand, the architect employs the benefit of some of our normal perceptual (natural) tendencies for the purpose of certain that this medium of resolution and solving is accessible visually in a perceptually clear or direct method. In this way, architecture tends to be more of an autographic than a given age group art, at least in terms that architects operation starts in the visual way in which their concept or proposals are showed and represented. then, the importance of sketches and drawings in the design process; they are the real process of work, not merely a representation of it.

Visual perception is the ability to interpret the surrounding environment, by interpreting information within visible things like (light, physical object ,.....etc.) ,The resulting perception is also known as "vision.", The different physiological elements of vision are all known as the visual system. It is the focus of research in psychology, Cognition, neuroscience and molecular biology, all known as vision science.

The process of designing and producing architectural drawings depends on the designer's innovative ability to fully plan the shape of something, and to create it in a way that is not only

functionally satisfactory but also brings pleasure to the soul, and this satisfies the need of the learner utilitarianly, scientifically and aesthetically at the same time.

Thus, visual perception can be defined as the means by which man relates to visual effects in his environment ,The process of visual perception, like other cognitive processes, is carried out only with the following factors:

١- **Self-visual perception factors** (perceived person) associated with the recipient , the presence of the individual with his different senses and his mental abilities which are many and varied , It's related to his cultural background , His level of experience, previous information, level of maturity and mental abilities , He is familiar with the skills of visual culture in general and optics reading skills in particular, as well as his knowledgeable way of dealing with and processing information.

From the moment the stimulics appear to the moment responses appear, some processes occur within the individual, some of which are necessarily mental processes , Others are physiological processes.

These are the factors that come from the self that are aware and these factors are : **the general readiness of the individual and his previous experience and attention .**

٢- **Objective factors** (associated with visual arousal) , The existence of the outside world filled with things and topics of each has a special significance that distinguishes it from the other.

٣- **Factors associated with visually exciting viewing environment** , These are the factors of where the exciting show is, the way it is organized, arranged, and the physical conditions prevailing in this place. It should be noted that just a visually exciting show doesnot mean the learner has read it the way it is, The conditions of the offer and the extent to which the recipient interacts with the exciting and the directions given to him.

We can say and argue that some designers (drawing) and artisans discover or find it hard to convey the drawing process (meaning) in language because it is a difficult task (complex process) and drawing is a time-consuming activity , human may not in fact be aware of the procedure over the period time. Besides, Variations in perception process are shown to provide very innovative results in drawing .

V- Reference

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