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Review Article

Freehand-drawing as basic principle to success interior design project

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Abstract

Freehand drawing courses are essential in almost all design disciplines, especially in the interior design program. This course has a significant impact on strengthening the neuromuscular compatibility between the eye, the mind, and the movement of the designer's hand. The ability to draw by hand brings in all ideas and creativity that the mind can imagine, to manifest in front of us. The mind is responsible for the movement of the hand, thus creating a strong link between the two, results in freeing of the imagination. Freehand drawing courses help train all the senses necessary for the process of design creativity and creation. It not only works as a communication tool between the designer, their mind, and the potential client, but it also plays an important role in the field of interior design with respect to the creation and problem-solving. This paper highlights where the problems exist in the lack of awareness of the course's role, impact, and methods of teaching it. This paper also describes the goals of freehand drawing courses and their roles in many of the major tasks of the Interior Design program. In particular, Training examples are provided to demonstrate how to build the students' perception and hand drawing skills that aid in their future of interior design. Additionally, didactic suggestions will be provided on how to teach freehand drawing courses to interior design students.

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Introduction

Freehand drawing is the most important and fastest method of bringing to life one's thoughts of design. When we lose the ability to draw, we lose the ability to translate our thoughts and imaginations, we lose the ability to see the fine details that make our environments. Therefore, freehand drawing is considered the best way to preserve the relationship that binds the eye, the mind, and the hand that draws and translates what one sees and imagines. This relationship is the basis of one of the most important thinking tools that the interior designer relies on. Additionally. Freehand drawing is the most important means of showing others the designer's imaginative thinking within the span of minutes.

A real and deep understanding of the visual and psychological principles of design is known and understood by how one sketches and draws without the use of additional tools. Sketching and drawing are engaging activities that make the author better with every attempt. Sketching with detail, as we know it, is a long and slow process. However, when one presents their ideas to others, sketching is a faster & more rewarding method because it is the easiest way to express one's ideas, but the most common concern that students face is the hesitation to sketch as they feel they can illustrate their ideas better using software thus creating a further barrier between their mind and hand (Ankerson & Pable, 2008).

Freehand drawing is divided into two types, drawing from reality and models, or drawing through imagination. Drawing from imagination is considered an advanced stage for students, which they can only reach after multiple

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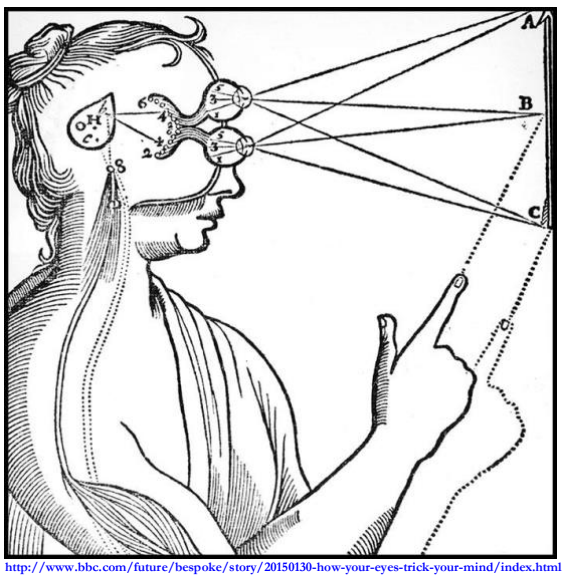
exercises that will be addressed (Bialkiewicz, 2019). These exercises help students strengthen drawing skills and their speed of perception and imagination; which is the basis of the design process for any designer working in the field of design. Hence, the freehand drawing course is one of the most important initial courses necessary for the growth and development of design students. Furthermore, it will allow them to break the barrier between their hands and imagination to be confident in their own design abilities.

The Imagination and Perception through the Freehand Drawing

The ability to draw freehand helps students acquire and improve many personality traits; as understood from several studies that have found a direct relation of how drawing affects the brain - the right hemisphere in particular, which is responsible for creativity and imagination. The training of mechanics in the eye and vision resulting from the freehand drawing exercises are the basis of visual perception as in Figure 1. This allows the student to process or store images that shape in their mind to improve the design process. Freehand drawing exercises help a student understand what they see in terms of design (Dodsworth & Anderson, 2015). Most people have a left or right side dominant brain. If one is mostly analytical and methodical in their thinking, then they are said to be left-sided. If one tends to be more creative or artistic, then they have a right-sided mindset. The left side of the brain is more verbal, analytical, and organized than the right side of the brain. The left is sometimes called the digital brain, it is the side that is better at things like reading, writing, and mathematics (Drazil, 2020). The right side of the brain is more visual and intuitive, which is sometimes referred to as the analog brain as in Figure 2. This side of the brain has a more creative and less structured way of thinking.

Visual imagination is the bridge between perception and representation, and it is an essential part of a student's knowledge (Garcia, 2013). This particular connection is what may cause limitations in imagination. Although our brain has tremendous processing power, it becomes very limited due to the bottleneck of one's own perception. Perception is how the mind captures the things that the student sees, perceives, and stores inside their mind. During freehand drawing courses students engage in drawing models that they see in front of them, this builds a library of images and models resulting from the dynamic of vision which helps strengthen their ability to retrieve it again the next time they draw (Kitsantas et al. 2017). The student's memory of images and shapes is activated, which helps in imagination, perception, and innovation from memory, as this process is considered the basis for the student's success in design courses, and it emphasizes the role of freehand drawing in strengthening skills in drawing what they imagine.



http://www.bbc.com/future/bespoke/story/20150130-how-your-eyes-trick-your-mind/index.html

Figure 1.

Mechanics – Eyes, Vision, and Perception

https://www.amazon.com/Emvency-Tapestry-Education-Psychology-Creative/dp/B07D7ZT6DS

Figure 2.

The Human brain sides' Classification

Bringing Awareness to the Physiology behind Visualization

The student's eye works through freehand drawing by seeing things around them as light enters through the lens and collides with the retina at the back of the eye, which in turn transmits it through the optic nerve to the visual cortex (Mao et al, 2020). The visual cortex is the part of the brain responsible for interpreting and storing perceptions in humans. Visual perception begins with the absorption of light through what is known as the cones and tubes in the retina (Mofield & Peters, 2019). The photoreceptor cone responds according to the number of light energy units it

captures, and its response is transmitted to two different types of neurons responsible for starting and stopping nerve excitation. In contrast, these neurons provide another type of cell with a receiving field, so that they give differential responses when looking at an object or exercises for stereoscopic models that the student addresses during freehand drawing courses, depending on the relative amount of light in the center of the field and the area around the body.

Interpretation of Visual Imagination

Visual imagination works by harnessing the student's brain functions. The visual information transmitted from the eye is processed in the occipital lobe - located on the lower region of the brain - during the transfer and drawing process that the student undergoes (Ogurlu, 2017). *As mentioned previously in the point of the dynamics of eye vision* in the form of a representation of the objects transferred. Directly above the occipital lobe, it is the parietal lobe, and its function is to coordinate and integrate the student's sensory information with other senses, including vision and perception.

Recent scientific research shows that our ability to imagine varies from person to person, and thus from student to student (Pilsitz, 2017). The first scientist to start research in this field was Francis Galton in the late nineteenth century when he published a paper on "Statistics of Mental Images to Determine the Different Degrees of Vividness and Brightness or the Degree of Glow of Pictures in the Imagination that different people have" (Schreglmann & Kanatli Öztürk, 2018). Some individuals can paint a wonderful picture that resembles the scene itself or of the things in front of them, and others can conjure up a very vague and non-conforming picture of the same thing. After several questionnaires, the researchers found that the brightness of the image in the visible brain regions varies from person to person. Consequently, there are varying degrees of ability to visualize our biology. Through these facts, we can infer the level of imagination interior design students possess by evaluating their awareness of shapes and images. Freehand drawing course exercises can assist in understanding students and their potentials, Furthermore, it would allow an instructor to apply alternative educational strategies for students that may not have vivid imaginations from their primary stages.

Visual Imagination For a Design Student

In the 1970s, Alan Bayview of the University of Western Ontario put forward a theory based on two parts: verbal reasoning, mental images and perception. Bayview began to enter educational technologies; with a scientific interest in the visual imagination and the affirmation of its important role in learning and knowledge acquisition. He was able to identify that the information in the brain is stored in two different ways: verbal and visual. The two methods of storage can interact to improve learning, creativity, and imagination of interior design students. This method appears to be particularly successful, because it strengthens the memory, thus it can be applied to enhance design students and their ability to think and imagine (Sera et al. 2015). Most of the research confirmed that mental photography is of utmost importance in students' acquisition of skills, understanding abstract ideas, increasing the imaginative ability, and finding design solutions. Therefore, once again this emphasizes a very important point in the role of freehand drawing: activating visual memory and students' perception. This is crucial, without it the student will not be able to interact with design courses that depend on imagination and creativity that result from continuous exercises on seeing and drawing (Soliman, 2017). Moreover, the primary mission of education in the early years becomes: to focus on teaching freehand drawing courses, to help with training in visual images, and to create images and generate shapes that will help students complete their studies in the interior design program.

Basics of Free Hand Drawing

Again, as mentioned earlier in the research, freehand drawing plays a major role in the interior design program, as it is one of the basic skills that interior design students or all design majors must possess, helping students express their creativity and imagination. Students can develop their ideas anywhere without the need for many tools or programs to implement them as a means of transferring, transforming, and extracting their innovative design ideas. It gives them the skill to convert information and design needs into preliminary drawings. These drawings help express professional requirements, find design solutions in the field of design, and provide them with the basic idea and the path that they will take in the design process. Also, drawing is an acquired skill that has rules and foundations, as 90% of the ability to draw is an acquired thing, and the drawing skill does not depend on talent only, but through repetition, follow-up, observation, and continuous training, one can acquire this skill.

The student may think and say that they do not have the talent for drawing. However, the truth is that any student can learn drawing if they have a passion for it, knowing that it is not too late for that, especially in the first years of the interior design program is important. But, some rules and foundations must also be known and if the student

knows these methodological foundations and rules, and continue to train on them, they will inevitably learn drawing. Each time the students draw, they will find small improvements in seeing and analyzing shapes and will improve the bank of images and shapes in their mind, which will help the students perceive and imagine, and will improve their hand's ability to draw. This will help the student in many areas such as digital drawing as well as obtaining the results they are looking for. The skill of drawing will add a new dimension to their work as a designer for later design courses, and it will help them improve their skills.

Development of Skills and Perceptions Through Repetition and Continuity

Habitualization of drawing skills makes it easier for a design student to continue enhancing their ability to communicate ideas, especially new students. Junior design programs tend to study design programs first, before tackling the issue of the ability to draw. This is a common mistake because no one directs them to properly study design, as they must first start with learning the basics of design and at the same time learning hand drawing (Travis, 2015). The goal here is to focus on learning freehand drawing to gain the skill of analysis and observation. In general, all the constituent elements of drawing models - as inorganic and organic nature models - are the main source of inspiration to extract ideas that are the most important for design learners in all interior design programs.

In 2006 researchers at Duke University in the United States believed that "more than 40% of the behaviors that novice students perform through repetition and continuation take 14 to 30 days to be fixed in the mind and then executed without effort. To acquire basic skills that will remain for the rest of their life (Zhang et al. 2018). Therefore, students must be advised to take continuous hand drawing training and to train their eyes to see well the objects in front of them every day. They can be encouraged to start for 10 minutes a day. Then increase this time gradually until the student gets satisfactory results from the habit of repetition. It is recommended that the students are explained not to be disappointed, initial results of the freehand drawing will not necessarily come out perfect, this progress will happen through hard work and habit. It is important to remind them at the initial stage, that in order to be advanced in drawing and design they need to put the effort and time. Students must be responded to at their respective levels, those in the first stage must be encouraged to not lose their self-confidence and may carry on with their development (Zhang et al. 2019). The course and exercises will enable students to realize the proportionality and artistic relationships they draw to be applied later on in the spaces and interiors they design.

The Role of Freehand Drawing Courses

This course is mainly a practical oriented course. It serves as an introduction to freehand drawing. It provides a basis for which students can develop their graphic communication in design by expressing themselves using chosen tools; on paper or any other suitable media. It takes steps towards introducing the students to line drawings, sketches of assembled objects, sketches of human figures, cars, trees, and a combination of all these. Rapid sketches of objects, buildings, and buildings entourage, and also an introduction to simple floor plans are all essential components of this course and the students' career. As a practical course, the focus is to impart useful skills on the students to enhance their drawing abilities using freehand techniques (i.e. without the aid of mechanical drawing instruments) and prepare them for architectural design -a studio base course in higher levels.

Course Objectives

The objectives of this course are to Improve students' ability to draw using their hands, enhance their graphic communication using different media, and introduce acclimate to architectural graphics and design at higher levels.

Course Learning Outcomes / Competencies

Upon successful completion of this course, the student will be able to:

- Draw with ease any object placed before him/her (without the use of rulers, T-squares, set squares, etc.)
- Attempt quick sketches with minimal mistakes.
- Draw various forms, from natural landscapes to human figures.
- Draw human activities and postures.
- Be able to use any wet media to graphically communicate their ideas.

Reflection & Conclusion

- Freehand drawing enables the student to visualize an idea in the form of a diagram. It is also a universal language that designers use to communicate with other project participants.
- That freehand drawing must be an inherent component of the design process.

- A convenient way of communicating an idea, but an integral part of the creative process that has a profound impact on thinking and problem-solving.
- More diverse and easy drawing leads to more creative approaches to design challenges. By how to understand the basics of the skill of drawing. Skills are divided into four types that support graphic thinking, namely: Notation, Knowledge, Discrimination Fiction
- The practice of highly repetitive freehand drawing leads to the development of graphic thinking. Through the drawing procedures, the design student will develop the skill of observation and the skill of perception**.** These skills help the students distinguish and visualize what they imagine. Observation, for example, will decisively influence their way of thinking. For this reason, vision and thinking will be fully developed through hand drawing.
- Freehand drawing is essential in developing creative thinking. And more than just a convenient way to communicate an idea, it is an integral part of the creative process that contains a profound influence on thinking and problem solving.
- The freehand drawing was done by the student. No help from others and unaffected or aided by digital design software. That is why freehand drawing is the only true creative way to design. It can also be called interior design thinking.
- The mechanics of the eye and respectable vision resulting from freehand drawing exercises are the basis of visual perception and thus the process of storing images and shapes in the student's mind and helps in improving the design process.
- Mind outputs from the stock of synonyms of words and multiple images depend on the mechanism of entering the word and image into the mind.
- Training and teaching freehand drawing programs is one of the most important reasons behind acquiring the ability of visualization and perception in interior design programs.
- The necessity of expanding and developing the teaching methodology in the freehand drawing course in interior design programs.

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