

Discussion on Point, Line, and Plane Composition of the Freehand Creation Unit

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Abstract—Design education emphasizes the combination of theory and practice. However, due to the advancement of information technology, the development of a student's practical ability is increasingly focused on training his electronic drawing skills. When digital media students do not receive adequate instructions in drawing skills, they find it demanding to draw their designs freehand. This situation must be improved. This article explores the teaching of freehand creations to students based on the basic principles of point, line, and plane composition to enable them to develop drawing skills and achieve the purpose of using electric painting and freehand drawing in design.

Keywords—*design education, practical ability, digital media students.*

I. INTRODUCTION

An essential fundamental ability for learning designers is the drawing skill composed of points, lines, and planes. However, the rapid development of cutting-edge technology and the diversification of design education result in the replacement of freehand drawing by electronic drawing. As a result, students of digital media no longer find it easy to draw freehand. This state of design is in urgent need of improvement.

This article integrates the training of drawing skills consisting of points, lines, and planes into the study of the Introduction to Design course. The intention is to train students so that their professional ability in drawing and electric painting can be fully used for design purposes.

II. LITERATURE REVIEW

Currently, to get more popular design solution, customers are allowed to provide their preferences for new design concepts to be evaluated [7]. Some people also apply design theory in the discussion of strategies for the optimization of ship design [1]. These theories can also be seen in the planning and implementation of enterprise cooperation in car-sharing [3]. Moreover, the concept of design is used to evaluate various battery types when trying to find the optimal design [2]. They are also applied in the integration and management of electronic technology [5]. It is expected that a more reliable design strategy could be obtained for the product [6, 8]. Furthermore, a proposed visual pattern design is expected to solve design problems [4].

From Kandinsky's point of view, "point" is considered to be silent. It can be the intersection of two lines or a small symbol suddenly produced. "Line" is the trajectory of the point's movement. Its main feature is the expression of its extension in length. It also has a continuous characteristic. "Plane" is the trajectory of a line's movement and can be changed to various shapes. It has a length and a width but no thickness [9].

III. TEACHING AND LEARNING

Because computer technology is advancing at a rapid pace, design education inevitably emphasizes the creation of electronic drawing. However, if the balance is disturbed, students will have learning deviations, causing inadequacies in the training of certain abilities, which is even more undesirable. This article discusses the relevant concepts of design theory in the teaching and learning of Introduction to Design course. In this course, the basic composition principles of dots, lines, and planes are explained. Then, the students are allowed to make freehand creations to train their basic abilities and skills in drawing. Secondly, teachers and students are allowed to discuss the theme of creation together to give students a reference for modifying their works.

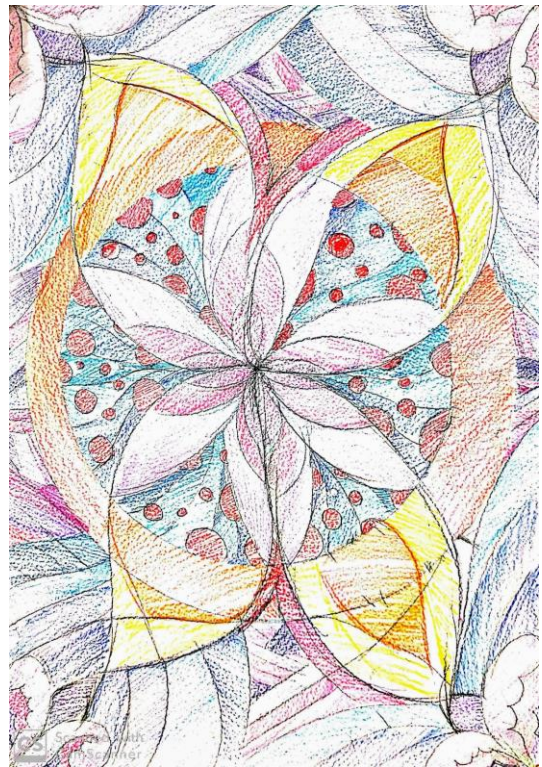
The research method of this article adopts the following. (1) Literature analysis is the theoretical basis of the research and is constructed by collecting literature related to the research topic, sorting it after reading, then summarizing and analyzing it. (2) Case study: In the Introduction to Design course (2 sessions per week/50 minutes per session), students from the Department of Digital Media have a total of 2 weeks to discuss the creation of their freehand composition using point, line, and plane. (3) Qualitative research: The qualitative discussion of the teaching and learning process of integrating point, line, and plane in creative compositions into the course of Introduction to Design [10].

IV. DESIGN RESULTS

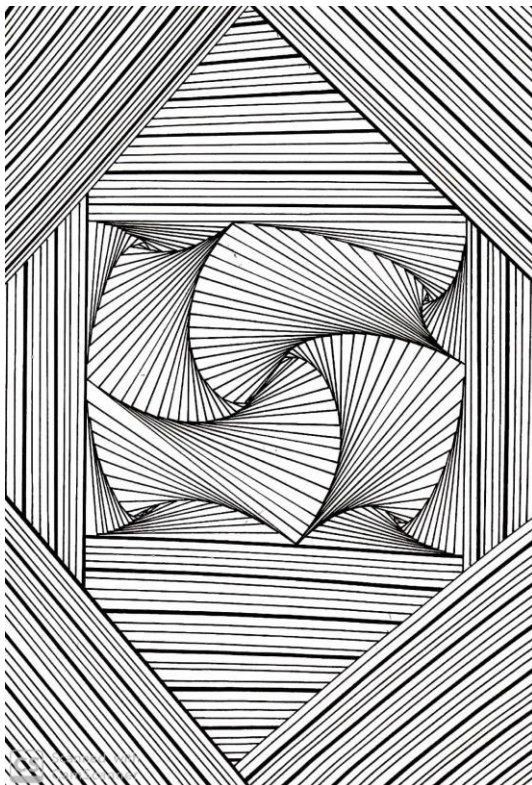
In this article, the teacher instructed the students of the Department of Digital Media to create point, line, and surface compositions by freehand to respond to combining theory and practice in the application of design education. Secondly, works with higher scores according to (1) teacher rating (40%), (2) peer evaluation (40%), and (3) students' self-evaluation (20%) are exhibited as a demonstration of the teaching results (figure 1).



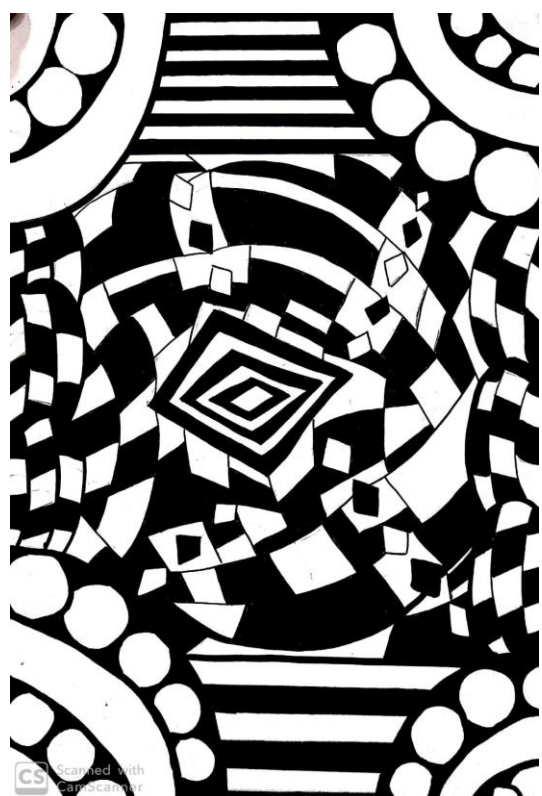
Chen, Min-Xun



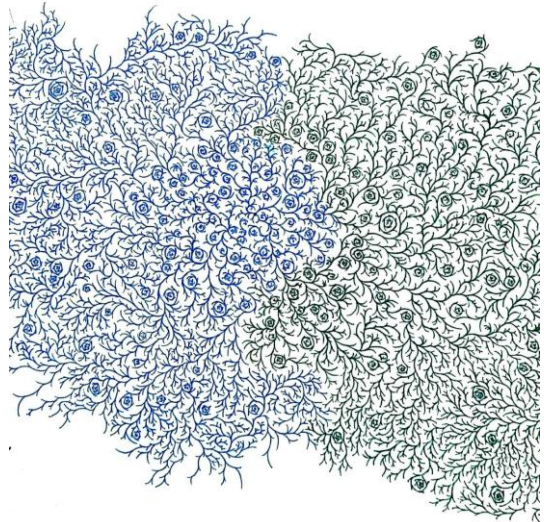
Hong, Xiu-Jie



Cheng, Wen-Li



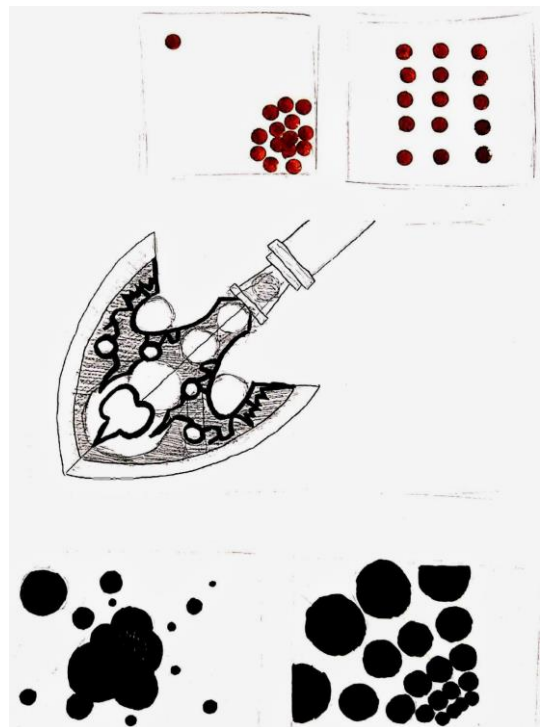
Li, Wan-Zhen



Xia, Qi-Xiang



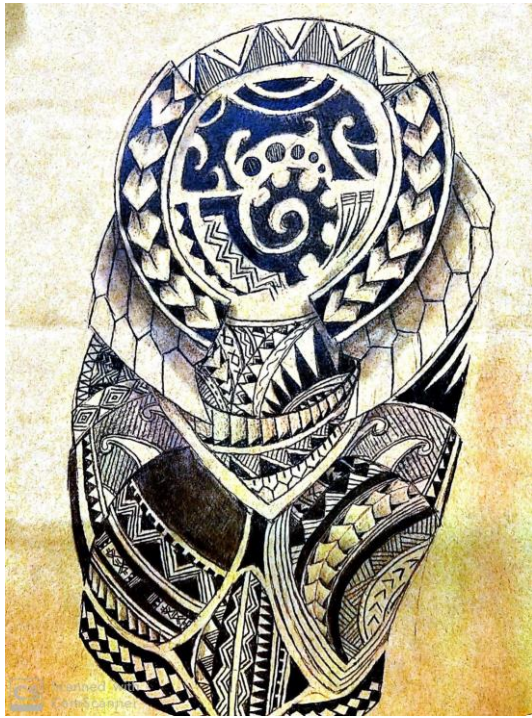
Lin, Yan-Yu



Xiao, Jun-Ren



Mei, Yi-Xun



Zhang, Yu-Xiang

Fig. 1. design results

V. CONCLUSIONS

This article discusses the learning history of the teacher and the students in the point, line, and plane learning unit of the Introduction to Design course. The results of this teaching and learning have the following characteristics.

- (1) The teacher guided the students to confirm the learning goals and objectives, as well as to stimulate their motivation for learning freehand creation.
- (2) The teacher respected the learning characteristics of each student. He encouraged the students to try to make freehand creations to cultivate their skills in both electrical and freehand drawing.
- (3) The teacher then guided the students in giving oral reports on their works to train their verbal presentation ability.
- (4) The teacher integrated freehand drawing skills into the Introduction to Design course, which lasted for only two weeks. It is hoped that in the future, more courses can integrate freehand drawing and creation in appropriate measures to help students develop their freehand design skills.

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