The Effect of Applying Digital Tools in Visual Communication Design Teaching

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Abstract: *This paper focuses on the research on the teaching effect of digital tool application in visual communication design teaching under the background of core literacy. And based on the elaboration on the connotation of core literacy in visual communication design and the importance of digital tools, it deeply analyzes the problems in the application of digital tools in current visual communication design teaching, and then proposes targeted teaching optimization strategies, aiming at enhancing students' comprehensive quality in visual communication design through effective strategies, cultivating students' creative expression ability, technical skills, aesthetic ability and cross-border integration ability, and providing useful reference for the digital teaching of visual communication design teachers to assist in the dual improvement of teaching quality and teaching effect at the same time.*

Keywords: *Visual Communication Design, Digital Tools, Core Literacy, Teaching Effect, Teaching Strategies*

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1.Introduction

With the advent of the digital age, the visual communication design industry is undergoing profound changes, and digital tools have become the core carriers of design and creation [1]. In the field of education, it has become an important objective to cultivate high-quality design talents that meet industry demand and promote the implementation of core literacy in visual communication design teaching. Digital tools can not only break through time - space limitations of traditional design teaching and enhance efficiency, but also build a complete learning chain for students from "creative ideation - technical implementation - multi-dimensional presentation" to help them master the cutting-edge skills in the industry and expand design thinking. However, in the current teaching of visual communication design, there are some problems, such as "emphasizing technical operation over the cultivation of literacy", "divorce between tools and teaching objectives", and "uneven application ability of students", in the application of digital tools, which restricts that teaching effect is brought into full play. Therefore, it is of significant theoretical value and practical significance to explore the effective application pathways of digital tools in visual communication design teaching and analyze their supporting role in the cultivation of core literacy [2].

2.The Core Literacy of Visual Communication Design and the Connotation of Digital Tools

2.1 *The Core Dimensions in the Core Literacy of Visual Communication Design*

The core literacy of visual communication design is the key ability and comprehensive quality that are formed by students in long-term study and practice, and meet the development of the industry and the needs of personal growth. It mainly covers four core dimensions. The first is creative expression ability, that is, the ability to conduct conceptual design, and visual symbol extraction and transform abstract ideas into concrete designing schemes based on the requirements of the themes. The second is technical skills, which refers to the ability to expertly use various design tools (especially digital tools) to realize creative ideas, optimize details, and finish the works. The third is aesthetic ability, that is, the ability to conduct professional judgment on the color matching, layout, visual rhythm, etc. of design works, and distinguish and enhance the quality of design works. The fourth is cross-border integration ability, that is, the ability to integrate knowledge from multiple fields such as graphic design, interactive design, and multimedia design to achieve cross-scenario application of design results in the context of digitalization. These four dimensions are interrelated, develop synergistically, and jointly constitute the core competitiveness of visual communication design talents [3].

2.2 *The Types of Digital Tools Commonly Used in Visual Communication Design Teaching*

In current visual communication design teaching, digital tools have formed a complete system of "foundational assistance - core creation - integrative presentation". Foundational auxiliary tools include Adobe Photoshop (picture processing) and Adobe Illustrator (vector graphic plotting), which are mainly used for material processing and the creation of graphic elements. Core authoring tools include Adobe InDesign (layout design) and Figma (collaborative interface design), which are suitable for book decoration, poster design, UI/UX design, and other core courses. Integrative presentation tools include C4D (3D Modeling and Rendering) and AE (Dynamic Visual Design), which can achieve the three-dimensional and dynamic presentation of design works to meet the design requirements in the digital media era. In addition, auxiliary tools, such as online collaboration platforms (such as Canva) and design resource libraries (such as HelloRF), also provide support for resource sharing and team collaboration during the teaching process [4].

3.The Current Situation and Problems of Digital Tool Application in Visual Communication Design Teaching

3.1 *Divorce Between Teaching of Digital Tools and Creativity Cultivation, and Emphasis on "Operation" over "Thinking"*

In the teaching of digital tools, some teachers overly focus on explaining the operation steps of software, such as "How to use PS to realize image matting" and "How to use AI to draw paths", but neglect the correlation between the tools and creativity. Although students can master the operation skills of a single tool proficiently, when facing specific design themes (such as "environmental protection poster design" and "visual identity system development"), they are unable to flexibly use tools to achieve creative expression, resulting in the problem of "excessive technology stuffing, but lack of design connotation" in their works. For instance, in layout design course, although students can use InDesign to accomplish text layout, they are not very clear about "visual hierarchy", "information flow" and other design logic, making it difficult for their works to achieve the effect of "combining aesthetics and practicality" [5].

3.2 *Mismatch Between Tool Selection and Teaching Objectives, and Monotonous Application Scenarios*

On the one hand, some teachers are not very clear about the functions of digital tools and their application scenarios in various industries, and the tools they choose are divorced from their teaching objectives. For instance, in the "Dynamic Poster Design" course, they still rely on static design tools (such as AI), and do not introduce dynamic design tools like AE, resulting in that students are unable to finish motion works that meet industry demand. On the other hand, the application scenarios of the tools are limited to class exercises and do not involve real projects. Students only fulfil "simulated design tasks" in the classroom and have not been exposed to real processes such as "customer demand analysis", "design scheme modification", and "commercialization", which makes it difficult for their application ability of digital tools to be transferred to actual working scenarios.

3.3 *Uneven Technological Foundation of Students, and Significant Difference in Teaching Effect*

Students have uneven foundation to digital tools before enrollment. Some students have a foundation in art and design, while others are from "zero start". As a result, there is a "polarization" phenomenon in the teaching process. Students with a better foundation can quickly master the advanced functions of the tools and even independently explore their innovative application. However, students with weak foundation have to spend a lot of time learning basic operations and are hard to keep up with the teaching progress, eventually forming a vicious cycle of "failing to learn effectively and struggling to apply tools". Furthermore, teachers lack stratified teaching strategies for students with uneven foundation, which further exacerbates the disparity in teaching effect.

3.4 *Lack of Process Assessment on Tools Application, and Lagging Teaching Feedback*

In current visual communication design teaching, the assessment on the application of digital tools mostly

centers on the “final works”, but neglects students’ performance in the process of “creative ideation - technical implementation - work refinement “. For instance, assessments on students’ tool application ability only focus on their final design works, but pay no attention to whether they make reasonable choice of tools, solve technical problems, or optimize design schemes during the creation process. This “outcome-oriented” assessment approach leads to that teachers are unbale to timely identify problems students encounter in the application of tools, teaching feedback is lag behind and they cannot adjust teaching strategies in a targeted manner. Under the “outcome-oriented” assessment model, students are also prone to fall into the learning trap of “emphasizing completed works over process”. For the “visual perfection” of the final works, some even students choose to bypass the core links of tool application. What’s more, some directly apply ready-made design templates, and complete their works merely by simply modifying the text and changing the pictures, without truly grasping the core functions of the tools. When encountering difficulties in technical operations, some students give up independent exploration and ask classmates to do it for them or simply copy online tutorials instead, which results in that their own technical application ability is never able to improve. For instance, in the final assignment of the “Packaging Design” course, a student submitted a 3D packaging model with excellent visual effect. However, when the teacher conducted a random inspection, it was found that the student only mastered the basic rendering function of C4D and had no knowledge of the core steps of model construction (such as tessellation and material adjustment). In fact, the work was completed with the assistance of his classmates.

This assessment method will also mask the hidden problems in the teaching process. Teachers cannot determine whether the students’ tool application problems lie in the “Convergence of creativity and technology” (such as the inability to realize the creative ideation with tools) or the “technical detail handling” (such as being unfamiliar with the optimization functions of the tools) merely through the final works. It is also difficult for them to know whether the students have tried multiple tools and made comparison and optimization during the creation process. Over time, teaching feedback has divorced from students’ real learning needs, and teachers are unable to precisely adjust their teaching focus. They may repeatedly explain the basic operations that students have already mastered, but lack guidance on what students truly need, such as “tool selection logic” and “solutions to technical problems”. Eventually, this leads to that digital tool teaching is confined to superficial level. It is difficult to effectively enhance students’ core literacy.

4.Strategies for Enhancing the Application Effect of Digital Tools in Visual Communication Design Teaching

4.1 *Building a Teaching System That Integrates “Creativity + Technology”, and Strengthening the Correlation Between Tools and Literacy*

Teachers can restructure the teaching content of digital tools with core literacy cultivation as the objective, and deeply integrate “technical operation” with “creative expression and aesthetic judgment”. For instance, in Photoshop teaching, teachers no longer explain “layer masks”, “filter effect”, and other operations in isolation, and combine with the theme of “portrait retouching design” to guide students to think about “how to retain the details of figures through layer masks” and “how to light up the atmosphere of pictures through filter effect”, and enable students to master the application skills of tools in the process of solving practical design problems, and understand the aesthetic logic behind designs at the same time. In addition, real design cases (such as brand LOGO design and e-commerce poster design) are introduced to allow students to analyze the application techniques of digital tools in the cases and cultivate the thinking habit of “realizing design ideas with tools”.

4.2 *Precisely Selecting Digital Tools Based on Teaching Objectives and Scenarios*

According to the teaching objectives and design scenarios of different courses, teachers select appropriate digital tools to avoid “tool abuse” or “shortage of digital tools “. For instance, in the “Graphic Advertising Design” course, with “static visual presentation” as the core objective, the focus is on teaching AI (vector graphic plotting)

and InDesign (layout design). In the "Digital Media Design" course, with "dynamic Visual Interaction" as the objective, AE (Dynamic Design) and Figma (Interactive prototype design) are introduced. In the "Packaging Design" course, to achieve "three-dimensional presentation", C4D (Three-dimensional Modeling) teaching is incorporated to enable students to transform from "flat sketches" to "three-dimensional packaging models" through digital tools. At the same time, in line with the development tendency of the industry, emerging tools (such as the AI design tool, MidJourney and the online collaboration tool, Figma) should be introduced in a timely manner to expose students to cutting-edge technologies and enhance their adaptability to the industry.

4.3 *Implementing Stratified Teaching to Meet the Needs of Students with Different Foundation*

In response to the issue of uneven technical foundation among students, a stratified teaching strategy is designed. Firstly, at the beginning of the term, students are classified into "basic level", "advanced level" and "higher level" through "Digital Tool Basic Tests" and "Design Work Placement Tests". Secondly, differentiated teaching objectives and tasks are set for students at different levels. Students at the basic level aim to "master the basic operations of tools and complete simple design tasks" (such as using AI to draw simple graphics). Students at the advanced level aim to "proficiently use tools to complete theme designs and optimize the details of works" (such as using PS to complete an integral poster design). Students at the higher level aim to "independently explore advanced functions of tools and achieve creative innovation" (such as using AE to create dynamic posters and add interactive effect). Finally, a model of "mutual-help group + personalized tutoring" is adopted to allow students with a better foundation to help those with a weaker one, while teachers focus on providing one-on-one tutoring to students at the basic level to close the gap of learning levels.

4.4 *Establishing a Dual-Oriented Assessment Mechanism of "Process-Oriented Assessment + Outcome-Oriented Assessment" to Optimize Teaching Feedback*

A multi-dimensional and process-oriented assessment system is established to comprehensively assess the application effect of digital tools. On the one hand, focus is on "process-oriented performance", and assessing on students' "rationality of technological choice", "problem-solving ability", and "integration of creativity and technology" in tool application through classroom observation, assignment feedback, group discussion records, etc. For instance, in the "Visual Identity Design" course, it is recorded whether students can select suitable tools based on the "brand identity" (such as using AI to design vector logos or PS to design brand application scenario pictures), and whether they can solve technical problems in the design process (such as LOGO color calibration and application scenario adaptation). On the other hand, in combination with "outcome-oriented assessment", a comprehensive score is given based on the "creative integrity", "technical proficiency" and "visual presentation effect" of the final works. At the same time, a multi-subject assessment model is established, including teacher assessment + student self-assessment + peer assessment", to allow students to reflect on their own tool application problems during the assessment process and enhance their autonomous learning ability. In addition, teachers need to timely sort out the assessment results, adjust the teaching content and methods for common problems (such as "unversed use of tool functions" and "divorce between creativity and technology") to ensure the timeliness and effectiveness of teaching feedback.

5.Conclusion

Under the dual background of the digital age and the cultivation of core literacy, digital tools have become important support for visual communication design teaching, and their application effect directly affect the improvement of students' comprehensive quality and the cultivation of their industry adaptability. In current visual communication design teaching, the application of digital tools still faces many problems such as "divorce between tools and creativity", "mismatch between choices and objectives", "uneven foundation among students", and "imperfect assessment system", which restrict the improvement of teaching quality. By implementing the strategies, such as building a teaching system that integrates "creativity + technology", precisely selecting suitable tools,

implementing stratified teaching, and establishing a dual-oriented assessment mechanism of "process + outcomes", teachers can effectively resolve the above problems, give play to the teaching value of digital tools to help students enhance their ability in creative expression, technology application, aesthetic judgment, and cross-border integration. In the future, visual communication design teaching still needs to continuously pay attention to the development tendency of digital tools (such as the application of Generative AI design tools), constantly optimize teaching strategies, promote the deep integration of digital tools and teaching, and cultivate more high-quality design talents for the industry.

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