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DIGITAL TEXTILE PRINTING

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The introduction of computer processing classis in the programs of the Art Universities attests the fact that the contemporary era is largely identified with the virtual space. Within the artistic university studies, collaborations are implemented with textile companies that use the latest digital technologies. This guarantees the development of students' skills for integration into the production markets as young designers capable of creating collections of digital prints.

Key words: *digital print, software, textile art, print design, contemporary art*

INTRODUCTION

In 2019 the department of textile arts and design from the "George Enescu" National University of Arts, Iași, Romania, has initiated a series of collaborations with local companies aiming at the creation of digital prints for clothing products and interior design. When we talk about to the virtual space, we are actually accessing an area that is perceived as storage of visual symbols. Virtual memory is supported by the extension of space as a form of storage (additional system), being a ecological solution [1]. Virtual construction is a new instrument in relation to the other drawing elements: pencil, pencil, chalk, paste, textile wire etc. As the appearance of the printer changed the modern age [2, 3], so also the era of the virtual space is under the sign of the interdependence of contemporary human activity and digitalization is its expression.

PURPOSE

In the design of prints for fashion or interior design, more and more emphasis is placed on the unique object, on the personalization of the final product. This is technically possible by using digital printing. The ultimate goal of a digital print collection is to give the buyer the opportunity to choose an item created especially for him. Moreover, production costs are lower and the risk of having a stock of unsold materials is diminished. The manufacturing company has the opportunity to adapt to the market almost immediately.

RESULTS AND DISCUSSION

Until the 19th century, textile printing was a technique specific to products intended for clothing and interior decoration. In Asia, the tradition of printing and painting silk has a rich tradition. Textile printing was the alternative to simple materials compared to those with texture (damask brocade) or embroidered ones. Printed surfaces were cheaper, faster and easier to produce. The richness of colors and the possibility of transposing the same design into different color ranges guaranteed the success of textile printing on the market. If in the early '50s and '60s, the workshops used mainly the techniques of classical screen printing



(templates [3], stamps, sieves and cylinders [4]) or batik printing, today digital methods are preferred techniques, both in industry and by freelance artists.

In 2021-2022, the department of Textile Arts and Design within the "George Enescu" National University of Arts, Iași, Romania, initiated a series of collaborations with the company ALL CIO Invest S.R.L. consisting in making digital prints for clothing collections. The printable materials were made of 100% polyester (viscose and jersey). Each domain is assigned with a specific program: for example, in design is used the 3D Max program, in architecture - ArchiCAD and AutoCAD etc. The field of visual arts is revived by new programs such as Adobe Photoshop, Corel Draw, with all their subcategories (eg Adobe Textile Design, Adobe Illustration, Adobe Image-Ready etc.).

In the making of digital printing, the programs are used conform to the requirements of the visual artist. Thus, students work with programs that have an intuitive interface and offer a wide range of technical possibilities, such as: editing brightness and contrast, focus, color, applying effects to the areas (selections) or to the entire image, retouching an image, modifying the number of arbitrary color channel support 8, 16 or 32 bit etc. The processes are constantly improved by adjusting the various parameters or the appearance of high-performance as subcategories of the basic program. In the rendering of the virtual / digital print, there are two directions of representation used by the students of the Textile Art and Design department: direct and indirect. Direct creation means that the design stage, which is performed in a program, is built by using the standard support or by attaching a graphic tablet. This way the image is projected on the screen in real time.

Indirect creation consists in the existence of a sketch, an image which is processed, reconstructed in the digital programs. In textile design, accessing these programs helps to create modular elements and chromatic variations faster, as a result of which a new aesthetic trend is observed: techno-craft ("digital mastery") [5,33]. This process is important in creating prints that are adapted to different art forms or decorative objects. Choosing the motif for upholstery of a piece of furniture, the material in the clothing design, the creation of decorative panels or works of art through digital printing is faster and more efficient. Today, most professional textile designers are using a form of computer-aided design "software" designed specifically for this purpose [6]. Fashion trends are becoming more and more dynamic, so the consumer preferences for printed fabrics are constantly changing. This phenomenon has imposed a growing need to explore printing techniques, as they meet the needs of new aesthetic and utilitarian trends in Textile Design. In the field of digital textile printing, major advances are noticeable, especially in the development of dyes and inks. Digital textile printing is now more similar to paper printing, but is on a complex scale where many variables are managed for providing the best possible result (on fabric).

In the collaboration with ALL CIO Invest SRL Company, we wanted the process of creating these projects to be as complex as possible, artistic and adapted to the contemporary market. However, the road from the individual creative act to the serial product starts with the same challenges: the initial sketch, made by hand most of the time, it was taken over in its digitized formula, then the chromaticity was established (passing through various color positions), and once



the module was completed, various compositional proposals were made to repeat in the decorative field or to adapt to the required shape. The issue of the design approach is always based on the individual act of the creator with artistic education, no matter how technological and digitized the subsequent trajectory would be.

Thus, starting from a series of sketches, the students made digital compositions directly on the computer using Corel Draw and Adobe Photoshop programs. Another collection was created starting from photos of some textile works of art made by students at the Textile Object Creation and Printed Technologies courses. The initial works were made in the specific techniques of the field: textile collage, patchwork, batik, screen printing, embroidery etc. Subsequently, the photos of these works were edited in the above-mentioned programs at the Computer Image Processing class, which is dedicated to the creation of contemporary digital prints. The final works made have a particular artistic note, because the digital print captures the effects of texture, refined chromatics and unique design.

The final results were sent in digital format for printing on textile (jersey, 100% polyester). Each student printed at least one project the size of 145 cm wide (imposed by the print head of the digital plotter) and variable length. The projects were appreciated by the collaborating company and the student got acquainted with the new technologies in the field of digital printing. By viewing the final product, it was possible to observe on a real scale and in a very short time the graphic quality, the printing accuracy offered by this current technique. Following the partnership, a number of students were hired by the company.

CONCLUSIONS

In the contemporary era, the complex component of virtual space in the design and implementation of works of art or objects with utilitarian values that appeal to print cannot be excluded from the artistic equation. Even with these technological achievements, manufacturers continue to make intense efforts to improve processes, to reduce production time and associated costs to a minimum, to always offer new original artwork. Today, the development of modern equipment and technology has allowed textile manufacturers to be able to reproduce print patterns in a variety of colors. This way of decorating can be done on a wide range of fabrics, using cost-effective processes, technologies that continue to improve, the expansion of textile printing capabilities.

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