CIRCLE

CHAPTER III

DIGITAL TOOLS

3.1 CHAPTER III
HISTORY

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Digital tools such as computer-aided design (CAD) and graphic design software can significantly reduce the environmental impact of design by reducing the need for physical materials and minimizing waste.

These tools allow designers to create, edit and share designs digitally, without the need for paper, ink and other materials.

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In Europe, the use of digital tools for design has been increasingly adopted in recent years.

In particular, the use of **CAD** and **graphic design software** has become more widespread as these tools have become more accessible and user-friendly. They are being used in various sectors including graphic design, architecture, and product design.

The evolution of Computer-Aided Design (CAD) software in Europe has followed a path similar to the development of CAD technology in other regions of the world.

CAD software has been used in Europe since the 1960s, when the first computer-aided design systems were developed for mechanical and electrical engineering applications. Over the next several decades, the technology evolved to include more advanced features, greater compatibility with other software programs, and increased ease of use.

In the 1980s and 1990s, the popularity of CAD software continued to grow in Europe, and new software programs were developed specifically for architecture, engineering, and construction (AEC) applications. During this time, the first true 3D CAD software was introduced, allowing for even greater flexibility and precision in design. The early 2000s saw the emergence of new, more affordable CAD software, making it accessible to a wider range of users.

In recent years, the evolution of CAD software in Europe has continued, with the development of cloud-based CAD systems and mobile CAD apps, among other innovations. Many CAD software programs now offer powerful collaboration features, allowing multiple users to work on the same design simultaneously. Additionally, the use of artificial intelligence and machine learning has allowed for the development of intelligent CAD software that can learn from user behavior and adapt to meet their needs.

Overall, the evolution of CAD software in Europe has been characterized by a continual quest for greater efficiency, flexibility, and ease of use, making it easier for designers, engineers, and other professionals to create high-quality designs.

These software programs are used by professionals and students in the graphic design field, and they offer a range of features and tools to help designers create high-quality, visually appealing designs and the following are some the main characteristics:

3.2 CHAPTER III
CAD AND GRAPHIC DESIGN SOFTWARE

There are many CAD and graphic design software that have been developed to be more energy-efficient and have a lower environmental impact.

The most popular include Adobe Creative Suite (Photoshop, Illustrator, InDesign), CorelDRAW, Sketch, Affinity Designer, and Canva.

Adobe Creative Suite[9]

- Non-destructive editing, allowing designers to make changes to their designs without permanently altering the original image or design.

- Advanced colour management tools, such as colour swatches and colour harmonies, to ensure consistent colour across designs.

- Customizable brushes and vector tools, which can be used to create unique graphics and shapes.

- Layer masks, which allow designers to apply changes to specific areas of their designs without affecting other parts of the design.

- Integration with other Adobe software, such as Adobe Lightroom and Photoshop, to streamline the design process.

CorelDRAW[10]

- Vector illustration tools, such as the pen tool and Bezier curves, to create precise graphics and shapes.

- Advanced typography tools, including font management and multi-language support, to create professional-looking text.

- Bitmap-to-vector tracing, which allows designers to turn pixel-based images into vector graphics.

- Customizable workspace, which can be tailored to each designer's preferences and work style.

Sketch[11]

- Vector-based design tools, allowing designers to create scalable graphics and designs.

- Collaboration tools, such as shared libraries and team design, to allow multiple designers to work on a project simultaneously.

- Automated design tools, such as symbols and styles, to streamline the design process.

- Integration with other design tools and plugins, such as Sketch Cloud, to extend its functionality.

3.2 CHAPTER III
CAD AND GRAPHIC DESIGN SOFTWARE

Affinity Designer[12]

- Vector-based design tools, including the pen tool and bezier curves, to create precise graphics and shapes.

- Advanced typography tools, such as kerning and ligatures, to create professional-looking text.

- Bitmap-to-vector tracing, which allows designers to turn pixel-based images into vector graphics.

- Customizable workspace, which can be tailored to each designer's preferences and work style.

Canva[13]

- Easy-to-use drag-and-drop interface, making it accessible for users with limited design experience.

- Templates, which can be used as a starting point for designs or to create new designs quickly.

- A range of design elements, including images, illustrations, and text, which can be easily added to designs.

- Built-in design tools, such as color palettes, font combinations, and grids, to ensure consistency and improve the overall look nd feel of designs.

NOTE

9— https://www.adobe.com/
10— www.coreldraw.com
11— https://www.sketch.com/
12— https://affinity.serif.com
13— https://www.canva.com/

3.3 CHAPTER III
TIPS AND TYPES FOR GRAPHIC DESIGN TEACHERS

The use of these graphic design software programs in the school sector may vary depending on the specific needs and requirements of the educational institution.

Furthermore, the specific software used in schools depends on factors such as budget, student skill level, and the type of projects being undertaken. However, programs like Adobe Creative Suite and Canva are commonly used due to their accessibility, affordability, and user-friendly features.

Adobe Creative Suite, for example, is a widely used graphic design software programme in schools due to its comprehensive set of tools and features for graphic design and digital media creation. Adobe Photoshop is especially popular for photo editing and manipulation, while Adobe Illustrator is commonly used for vector graphics and logo design. CorelDRAW, Sketch, and Affinity Designer are also used in some schools, but they may not be as widely adopted as Adobe Creative Suite due to their cost and more advanced features.

Canva is a relatively new and affordable graphic design software that has gained popularity in schools due to its user-friendly interface and drag-and-drop design features. It is well-suited for students who are new to graphic design and want to create visually appealing designs without a steep learning curve.

HERE ARE SOME TIPS AND TYPES FOR GRAPHIC DESIGN TEACHERS ON
how to introduce digital tools in the curriculum:

- **HANDS-ON LESSONS**
  Teach students the basics of using graphic design software through hands-on lessons that allow them to experiment and practice on their own.

- **PROJECT-BASED LEARNING**
  Assign projects that require students to use specific digital tools, giving them the opportunity to explore and master these tools while working on real-world design projects.

- **GUEST SPEAKERS**
  Invite industry professionals who use digital tools in their day-to-day work to come and speak to students about their experience and the benefits of these tools.

- **ONLINE RESOURCES**
  Encourage students to explore online resources such as tutorials, forums, and design blogs to learn about new digital tools and techniques.

- **GROUP DISCUSSIONS**
  Lead group discussions about digital tools and their role in graphic design, encouraging students to share their experiences and insights.

- **FIELD TRIPS**
  Organize field trips to design studios, printing shops, and other creative organizations that use digital tools to help students understand the practical applications of these tools in the real world.

3.3 CHAPTER III

TIPS AND TYPES FOR GRAPHIC DESIGN TEACHERS

ROMANIA
THE USE OF COMPUTER-AIDED DESIGN (CAD) SOFTWARE IN SCHOOLS

—————————— The use of CAD software in schools is becoming more common as technology and digital tools become more integrated into education curriculums. It is important for schools to provide students with access to the latest technology and software to prepare them for careers in fields such as graphic design and architecture. Some schools in Romania also offer specialized courses or programmes in areas such as CAD and 3D modeling to provide students with advanced skills in these areas.

ITALY
THE USE OF COMPUTER-AIDED DESIGN (CAD) SOFTWARE IN SCHOOLS

—————————— The use of Computer-Aided Design (CAD) software in schools in Italy varies depending on the institution and the specific programme or curriculum. Many technical and vocational schools, as well as universities, offer courses and programs that include CAD software training. Some institutions have dedicated labs or facilities with specialized equipment and software for students to use. The use of CAD software in schools in Italy has been increasing in recent years as the demand for digital skills has grown in many industries. This has allowed schools to provide students with the skills they need to enter the workforce with a competitive edge. However, the use of CAD in schools in Italy is not universal and not all schools have the resources to provide training on this technology.