

Issues of Design Education in the Modern Information Environment

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ABSTRACT

The article is aimed at studying contemporary issues of design education in the modern information environment. It presents the analysis of specialist designer software, discusses the difficulties of transition to Russian software in educational institutions of Russia, and outlines the characteristic features of teaching design in modern socio-cultural and educational conditions. These characteristic features consist in using general methods and approaches to implement a particular design project, taking into account modern trends in design, encouraging the development of students' semantic sphere, and increasing students' awareness of the need for self-education to improve their professional skills and competitive ability in the modern information environment. The analysis of transition indicates that using Russian computer graphics software does not fully satisfy the requirements of the professional design market. The obtained results can be applied to improve design education and teaching design in modern socio-cultural and educational conditions.

Keywords: *Software, design, Designer, Information environment, Self-education, Self-educational competence.*

1. INTRODUCTION

Creating and maintaining a modern information environment require the application of modern approaches to design education. According to A.N. Lavrentiev, "design is an artistic project activity associated with the development of people's subject environment and visual communication and information systems; and functional and rational organization of people's lives and activities". [1] It can be said that design as an independent type of professional activity starts with the massive production of various types of goods.

On the other hand, design is a creative activity; it gives an opportunity to create mass-consumption products that are original and aesthetically appealing. Design encompasses two areas – "artistic design", the focus of which is aesthetic appearance of things, and "technical design", which implies designing and developing most appropriate products in terms of usability throughout their entire lifecycle, from design to operation and disposal. [2] Design objects can vary from physically existing things to the ones present in the

virtual space, like websites. The purpose of design is the opportunity to satisfy different human needs, including the need for cultural identification, and "effective organization of the subject and information environment based on artistic models". [1]

Modern society has become truly information and digital. In the field of design, computer technologies are rapidly developing too, and alongside with traditional, "physical" tools, such as pencils, brushes, etc., designers now make use of new powerful tools: computers, graphics tablets and multimedia. Nowadays, there exists different software for design professionals in various areas of design: architecture design, graphics design, interior design, fashion design, etc. [3, 4, 5, 6, 7, 8]

In higher education institutions of culture, art and design, modern technologies and software are also used to train future professionals in these areas.

2. PRESENTATION OF RESULTS

As computer graphics and computer design are advancing, there appears software for various areas of design to assist designers in fulfilling their creative potential. However, when performing their work, designers use a set the largest and most popular software packages, e.g. Adobe Photoshop, Adobe Illustrator, Adobe InDesign (and the entire Adobe software package), CorelDraw, Autodesk 3DS MAX, Autodesk AutoCAD, Maya, etc. The reason is that initially these products were market leaders in computer graphics and design. They are very powerful designer tools that combine a variety of instruments, filters, effects, etc. providing opportunities for processing photographs, digital painting, animation (2D and 3D), 3D interior and exterior modelling, draughting, creating sewing patterns, costume design, page layout, web-design, etc. These computer programs are commercial and licensed products; many of them are rather expensive. It should be mentioned that some of them offer special license options for educational institutions, teachers and students, and are either free (e.g. Autodesk 3DS MAX, Autodesk AutoCAD) or very affordable (CorelDraw).

Until recently, the range of software applied when teaching computer graphics and design to students included software packages mentioned above, which is understandable, considering that in order to be in demand in the labour market, a future professional is required to possess the knowledge and skills of the basic programs used by employers.

In this regard, one of the key issues of design education is rapid software upgrade and the emergence of new tools and methods of work. Actually, in higher education institutions, software may not be updated as quickly as desired. In this case, it is essential not just to study certain software and tools, but to focus on general methods and approaches to implementation of design projects, taking into consideration modern trends in professional design development. Teachers at higher education institutions should plan and organize the educational process in such a way as to ensure its focus on self-development of future specialists and create stimulating learning situations to encourage students' self-studying (e.g. by means of context and group learning, education and business games, educational tasks that develop information retrieving skills, such as using new software, training transfer, etc. [9])

Another significant task of design education is encouraging the development of students' semantic sphere and raising their awareness of the need for self-education to improve their professional skills and competitive ability in the modern information environment [9]. It should be emphasized that "self-educational competence as a personal and professional quality of a modern specialist consists in their ability to independently initiate educational and developmental activities aimed at general cultural and professional development, which is associated with performing professional tasks, extending knowledge, professional and life experience". [9] Taking the above-mentioned approach leads to the development of self-educational competence in students, which involves "taking interest in self-education as a new source of development and competitive ability, creating a personal system of work, and then turning creative, self-educational "computer work" into an integral element of a specialist's professional activity and free time" [9].

The next issue of design education is more of a technical nature. It is conditioned by a recent tendency towards using Russian software in general, vocational and higher education institutions. This transition is justified in many respects, in particular, by aggravation of the international situation and sanctions imposed against the Russian Federation which may result in possible refusal to license certain types of software. Undoubtedly, an important issue is information security, since using foreign software can lead to data breach and transferring data (including personal data) to third parties. For state organizations, for instance, it is obviously unacceptable. [10] Most of the software used in the Russian Federation is of foreign origin, and government concerns over these issues were first expressed back in 2014. Therefore, restrictions on using foreign software were adopted at the legislative level. [11]

Currently, there exist the following regulation documents that cover the issue of using Russian software in educational institutions:

- Order of the Ministry of Digital Development, Communications and Mass Media of the Russian Federation No. 486, dated September 20, 2018 "On approval of guidelines for the transition of state companies to the prior use of domestic software, including domestic office software" [12];

- Order of the Ministry of Education and Science of Russia No. 1220, dated December 14, 2017 “On organization of transition to the use of domestic office software in the Ministry of Education and Science of the Russian Federation for the period of 2017-2018, and up until 2020”. [13]

Additionally, in the Russian Federation there is the “Unified Registry of Russian Software for Computers and Databases” approved by the Ministry of Digital Development, Communications and Mass Media. It was created in accordance with the law “On information, information technologies and data protection” and lists software recognized as developed in the Russian Federation [14]. Based on this registry, software for educational institutions is selected and installed. However, having thoroughly analysed this registry (by making search queries “graphics design” or “graphics”, one can see that software for designers and artists is simply not on the list; there is the only link, to the “Electronic Study Guide on Graphics Design” – electronic teaching aid that focuses on working with Adobe and Autodesk 3DS MAX packages. [15]

The transition to Russian software has entailed the transition to the Linux operating system. It meets the requirements of educational institutions, but in fact, the professional designer software mentioned above cannot be installed on it. Of course, there are other computer graphics programs that allow mastering the basic skills of working with different types of graphics: Gimp, Photopea (raster graphics), Inkscape, sK1 (vector graphics), Natron (video compositing), Blender (3D graphics). These are free editors with a sufficient toolkit and functionality; nevertheless, they still cannot fully satisfy the requirements of the professional design market.

3. CONCLUSION

Thus, a conclusion can be made that problems and issues of design education are not only due to the emergence of new tools and methods of working with software or the organization of the educational process, but also due to the absence of sufficient Russian software, especially that is compatible with the Linux operating system. This, in turn, cannot but affect the quality of training modern professionals in the field of design.

AUTHORS' CONTRIBUTIONS

Ruslan Chudinsky set research goals and objectives, structured the obtained results and made conclusions; Irina Preobrazhenskaya developed the research methodology, structured the obtained results and made conclusions; Alexander Volodin selected reference materials appropriate for the goals and objectives of the research, structured the obtained results and made conclusions.

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