

# The Role of the Software in the Development of Information and Communicative Competence of Future Workers of Culture and Art

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## Abstract

Information and communication technologies have become an integral part of our lives. They have changed our social habits and changed our perception of ourselves and the world around us - affecting human behavior. Art works the same, even more, because it can provide unexpected performances of the world and thus provoke new insights. By utilizing new media resources, students can expand their creativity through digitally simulated information. Flexibility of digital data is what makes new media of vital importance for the teaching of fine arts. By using automated media tools and graphic software, students can quickly see the results of their ideas. By applying ICT, the amount of work in creating visual information is minimized, so students will have more time for creativity, collaboration, research and assessment.

**Keywords:** Information and communicative competence, Information and communication technologies, art, art education, software, music, actor, drama theater, cinema prepares.

## 1. Introduction

Information and communication competence is defined as the ability of students to use information and communication technologies for access to information, its identification, definition, organization, processing, evaluation, as well as its creation-production and transmission-dissemination, which is sufficient to successfully live and work in the conditions of the information society, in the conditions of an economy based on knowledge.

Communication and information exchange is one of the cornerstones of the human community. From the first attempts of a man to

address the environment, the development of techniques that a person serves to communicate begins. "However, the first words that a man uttered and the first drawings he made on the walls of the caves were at the same time the means of communication and means of expression, which we will later call artistic"[1]

Information and communication technology has become an irreplaceable tool in many professions, even in the arts. Work in any branch of applied art is inconceivable without a computer: architecture, interior, graphic design, multi-media design, industrial design, advertising are just some of the tasks that involve two-

dimensional and threedimensional design techniques with the help of computers. In classical art disciplines, painting, graphics, drawing and sculptures of ICT can be directly involved in the process of creating a piece of art or indirectly.

ICT competence can be considered as a comprehensive ability to independently search, select the necessary information, analyze, organize, present, transmit it; to model and design objects and processes, implement projects, including in the field of individual and group human activities using ICT tools. It is fundamental that ICT competence is of a supra-subject, general educational, general intellectual character.

Thus, ICT competence can be defined as the ability to solve educational, everyday, professional tasks using information and communication technologies.

The formation of information and communication competence is not only (and not so much) the formation of technological skills. This is the emergence of students' ability to use modern information and communication technologies to work with information both in the educational process and for other needs.

The development of new expressive means of communication, the discovery of new media, especially the development of photography, film and television, new means of reproduction and modern technology have contributed to the visual and communication expression in our century of completely new forms and dimensions. Due to the interweaving, complementing and joint action of all these areas in this development, it was understood, understandably, that enriching the expressive possibilities.

## 2. Materials and methods

“Sure ownership” should, first of all, mean the ability to apply ICT skills - literacy in solving various kinds of practical information problems. In life, we are faced with solving information

problems at every step: when we make purchases, book hotels, choose medicines, write an article, etc., etc. In the process of solving the problem, each of us goes through certain stages of working with information.[2]

Stages of working with information.

- 1) Definition of information.
- 2) Information management.
- 3) Access information.
- 4) Integration of information.
- 5) Evaluation of information.
- 6) Creation of information.
- 7) Information transfer.

A tool has been developed at the National Training Foundation allowing to evaluate information and communication competence (IR competence, ICK) of graduates of a basic school, - The Information and Communication Literacy Test, abbreviated IC Literacy Test, ICT-test. Its feature is the ability to determine the ability of students to use information and communication technologies for gaining new knowledge, communication, conducting research, which ultimately should help them acquire lifelong learning skills and succeed in their chosen professions or specialties.[3]

The software is a certain set of programs, rules, and also the corresponding system documentation intended for information processing. This applies to information technology and systems.

Software is the most important component of any information system. At present, there is simply a huge number of programs and various applications, thanks to which it is possible to implement various information processes. All of them will be able to satisfy the information needs of this or that user.

In general, information software is a program whose function is to solve certain problems. Not a single, even perfectly designed, system can function without software. This is due to the fact that its meaning will be lost. Based on what

requirements are presented, the software of information systems is also different. Thanks to the availability of translator and application programs, it is possible to translate from a high-level language to a machine language.

German Association of Art Teachers (Bund Deutscher Kunsterzieher) recognized the potential of ICT for use in the teaching of fine arts and published the document "Digital Media in the Art of Learning" (Digitale Medien im kunstunterricht) in which, among other things, it says: "Communications in the information society are done with the help of digitally generated images. This fact puts the school ahead of new demands, primarily the teaching of fine arts, which is the only subject that explicitly deals with the creation and understanding of visual messages, which puts it in a special place among teaching subjects. [4].

The actor of the drama theater and cinema prepares and performs the roles or parties assigned to him in performances, concerts, television and radio programs, films, and other works recorded on media; independently engages in a simulator, saves and maintains an external form corresponding to the nature of the roles, parties; participates in the discussion of the idea of the production, in which he is directly involved.

The actor of the drama theater and cinema prepares under the direction of the director and plays roles in drama performances of various genres, as well as in film and television films; must be fluent in stage speech, have the basics of musical literacy, singing (both solo and in a vocal ensemble), have special skills in stage movement, be technically and plastically ready to perform the tasks set by the choreographer.

Description of professional educational program: The main educational program of the actor is developed on the basis of the State educational standard and includes a curriculum, programs of disciplines, programs of educational and practical training. The main educational program of the

actor is formed from disciplines of the federal component, disciplines of the national-regional component, disciplines of the student's choice, as well as optional disciplines.

### 3. Discussion

1. The formation of new technologies in the theater in the context of historical development is associated with: changes in the scenographic imagery of the picture of the world, with the development of socio-aesthetic features of various eras, with the emergence of spectacular aesthetization of technology and the growing influence of the theater's technical equipment, contributing to the creation of new genres and forms of spectacular arts.

2. Information technology in modern scenography has allowed the formation of a new culture of scenography, complementing the emotional side of the traditional graphic and pictorial technique of sketching with more detailed professional characteristics: variability, spatial composition, exact scale, an abundance of textures and special effects; the ability to accurately reproduce and transmit them in digital format. Creating scenography from files allows you to quickly reproduce elements of decoration: picturesque backdrops, decorative curtains, imitation of textures, does not require full architectural supervision. Quick transformation of sketches, their development in graphic programs, compact storage and recording of full-text scenography files on digital media, computer-aided modeling, creation of a musical score using multimedia programs, collection and transmission of professional information on the global Internet, and much more are combined into a diverse, multi-component stage designer activities. AWP "Production Designer", the specifics of which allows the implementation of the full cycle of creating scenography with elements of direction, contributes to the adoption of optimal decisions in the implementation of the production.

3. In the organization of the theater process, new technologies contribute to the formation of new principles for the implementation of this type of activity. They represent a combination of methods, production and software and technology tools, combined into a technological chain that provides for the collection, storage, processing, output and dissemination of information.

4. In modern theatrical creativity, tendencies of the interaction of artistic languages, the intersection of their semantic fields are manifested. New virtual technologies allow the viewer to transform from an observer to a co-creator, capable of influencing the development and modification of a work of theater art. The principle of interactivity, as a form of co-creation of the director and the audience, modifies the work of theatrical art, contributes to the diversity of creativity.

5. New technologies, which introduced into the synthesized genres of mass theatrical performances, city festivals, carnivals, festivals, entertainment, visualization, informativeness, contributed to the aesthetization of technology as a form of spectacle and creative activity.

6. The use of new technologies in the staging process of St. Petersburg theaters expands the creative possibilities of scenographers in creating an artistic image of performances that meet the new aesthetic requirements of the era.

7. The use of new technologies in the educational theater contributes to the preparation of students for the requirements of the modern theater, activates the learning process.

8. New technologies contribute to the unification and globalization of theatrical art, including through online broadcasting of performances on the Internet. The possibilities of information scenography changed the organizational processes of touring, made it possible to quickly form the stage space of performances in rooms and in open areas, and introduced into the performance a spectacular component of the creative concept. [5]

However, the need for frequent changes in the repertoire, the creation of performances in conditions of self-financing leads to the replication of elements of information scenography, the monotonous use of projection, screen design, collage, typical images, citation, etc., which negatively affects the development of the theater.

New technologies, radically affecting the dynamics of the artistic process, are the source of the diversity of modern types and forms of artistic practice.

Until recently, the question of the use of computers in music education has been controversial. Today, in the age of universal computer literacy, the fact that both theoretical and methodological studies of the possibilities of using computers in music education, as well as attempts to obtain initial practical experience in using computers when conducting classes in musical subjects, is absolutely necessary.

There was a point in everyone's life when animation was just the coolest thing you'd ever seen. Whether it was a Disney movie as a kid or maybe a 3D game cutscene that blew you away, there was always something spectacular when imaginary characters move and act as in real life. And don't think that power went unnoticed by graphic designers. In the digital era, animation can do more than just entertain children with a boat-driving mouse. It's an effective tool for visual communication. Of course, it offers a whole new medium for expression and creativity, but on a more practical level, the movement of animation attracts more attention than static images. And considering the restraints of live footage, sometimes an animation of a bouncing ball works best. There are a lot of softwares used in animation. Some are used for simple 2D animation, some for complex 2D animation with multiple layers and special effects, some are used for 3D animation. Some can be used for both 2D and 3D in various ways.

Animation is the capturing of sequential, static images—drawings or photos of inanimate objects—and playing them in rapid succession to mimic real world motion.

#### 4. Result

Creating work with a computer is easier than working in traditional media. The computer is a great tool for experimentation and research, the original drawing can be saved, and then all its variations in the process of operation. In order to achieve this in traditional media, the process can be complicated and timeconsuming. Computers can easily connect photos, video works with computer images and drawings. With all this, there is the possibility of canceling the last steps. Although there are many types of artwork that can not be created with the help of computers, they are without competition in creating two-dimensional works.

Knowledge acquired through the use of computers in the teaching of fine arts can be applied in various occupations in life. Knowledge in using ICT can be described as being actively used, and includes understanding, selection, critical evaluation, openness to novelties that are susceptible to further development.[6]

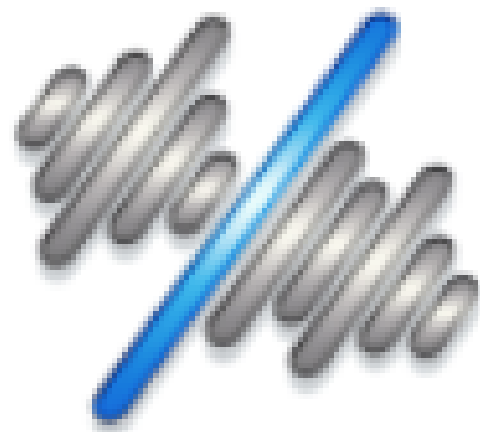


**Cubase** is a digital audio workstation (DAW) developed by Steinberg for music and MIDI recording, arranging and editing. The first version,

which was originally only a MIDI sequencer and ran on the Atari ST computer, was released in 1989.



Cubase is one of the most powerful music creation software packages in the world. With its unrivaled range of flexible tools, you can create any kind of music quickly and intuitively. It comes packed with a wide range of virtual instruments, effects and thousands of sounds. Whether you're a professional composer or a music production beginner, Cubase provides you with everything you need for turning your ideas into music.



Making computer music for beginners has always been a daunting task. A huge number of programs that are very difficult to master, and their high cost, made up a certain reputation for the art of computer composition as not accessible to everyone. This situation is trying to change the company Magix software package **Music Maker**. For many years, Magix has been systematically developing its product, which is based on

functions from the professional software package Magix Samplitude. With the help of Music Maker, musicians of any skill level can create musical compositions. Although the program is incredibly easy to use, the music created with it can be quite complex.[7]



The Music Maker program has come a long way of development, and in this version it is called MX, which means Media-X-Change - a quick exchange of media files with other MAGIX programs, online services and mobile devices, which is modern and relevant.



Mixcraft 8 is driven by a new, lightning-fast sound engine, featuring advanced audio and MIDI routing, native sidechaining, and Audio Control, an innovative new feature allowing audio signals to control instrument and effect parameters. Comprehensive support has been added for VST3 plug-ins and MP4 video, both must-have formats in professional studio environments. Mixcraft 8 is packed with high-end features including live performance panel recording, nested submixes, track grouping, and so much more. We've even integrated Melodyne pitch correction directly into Mixcraft 8 Pro Studio's interface for flawless vocal performances.



**Mixcraft** is a multitrack recording application for Windows. This music recording software functions as a digital audio workstation, MIDI sequencer, virtual instrument host, non-linear video arranger, and music loop recording program.[8]



**FL Studio** (until 2003 known as Fruity Loops) is a digital audio workstation developed by the

Belgian company Image-Line. FL Studio features a graphical user interface based on a pattern-based music sequencer. This section covers the FL Studio desktop and basic workflow. FL Studio allows you to load instruments and samples, play these live or manually enter the note data, record external sounds (from a microphone for example) and play the whole mix back through the mixer (adding effects). The completed project can be saved to a .flp or .zip and/or exported (rendered) to .wav, .mp3 or .ogg audio.



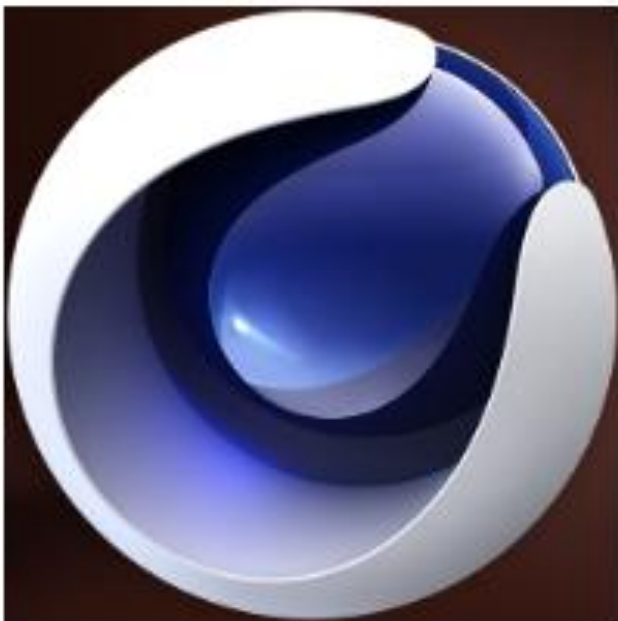
**Autodesk 3ds Max**, formerly 3D Studio, then 3D Studio Max is a professional 3D computer graphics program for making 3D animations, models, games, and images. It's developed and produced by Autodesk Media and Entertainment. It has modeling capabilities and a flexible plugin architecture and can be used on the Microsoft Windows platform. It is frequently used by video game developers, many TV commercial studios, and architectural visualization studios. It is also used for movie effects and movie pre-visualization. For its modeling and animation tools, the latest version of 3ds Max also features shaders (such as ambient occlusion and subsurface scattering), dynamic simulation, particle systems, radiosity, normal map creation and rendering, global illumination, a customizable user interface, new icons, and its own scripting language.

**The Antics 2-D Animation software** is a proprietary vector-based 2-D application for animators and graphic designers, running under Microsoft Windows. It was created in 1972 by Alan Kitching, the British animator, graphic designer, and software developer. From 1977 to 1998 the Antics software was continuously developed and was widely used by many studios around the world. The software of that time ran under Unix and Fortran, which by the late 1990s had been superseded by newer multimedia-oriented systems based on C++, and support for the older Antics was discontinued in 1998. In 2006, a project to build a completely new Antics software for C++ and Windows was begun, and the first published version made available in 2010.



**CINEMA 4D** is a 3D modeling, animation, motion graphic and rendering application developed by MAXON Computer GmbH in

Germany. It is capable of procedural and polygonal/subd modeling, animating, lighting, texturing, rendering, and common features found in 3D modeling applications. Four variants are currently available from MAXON: a core CINEMA 4D 'Prime' application, a 'Broadcast' version with additional motion-graphics features, 'Visualize' which adds functions for architectural design and 'Studio', which includes all modules. Initially, CINEMA 4D was developed for Amiga computers in the early 1990s, and the first three versions of the program were available exclusively for that platform. With v4, however, MAXON began to develop the program for Windows and Macintosh computers as well, citing the wish to reach a wider audience and the growing instability of the Amiga market following Commodore's bankruptcy.



**iClone** is a real-time 3D animation and rendering software program that enables users to make 3D animated films. Real-time playback is enabled by using a 3D video game engine for instant on-screen rendering. Other functionality includes: full facial and skeletal animation of human and animal figures; lip-syncing; import of standard 3D file types including FBX; a timeline for editing and merging motions; a scripting language (Lua) for character interaction; application of standard

motion-capture files; the ability to control an animated scene in the same manner as playing a video game; and the import of models from Google 3D Warehouse, among many other features. iClone is also notable for offering users royalty-free usage of all content that they create with the software, even when using Reallusion's own assets library.



## 5. Conculision

The incidence of images in the lives of young people has transformed the way in which they learn and experience the world, their use of visual messages has created the need for new skills in order to actively engage young people in life. New technologies, radically affecting the dynamics of the artistic process, are the source of the diversity of modern types and forms of artistic practice.

Until recently, the question of the use of computers in music education has been controversial. Today, in the age of universal computer literacy, the fact that both theoretical and methodological studies of the possibilities of using computers in music education, as well as attempts to obtain initial practical experience in using computers when conducting classes in musical subjects, is absolutely necessary.

Today, most theoreticians believe that the education of visual arts and that art itself should be integrated into other areas of learning to ensure



that all young people become visually literate in the visual age. However, there are some shortcuts of countries that have reduced classes of visual arts education, and the emphasis is on mathematics and science. The school, and art education, should be adapted to the current social and educational needs. With constant changes in our environment, today's childhood changes, not just habits. Types of media, various social conditions, have led to new ways of life and changed childhood experiences. Today's students live in a time that works hard on them: with a little free time, often emotionally neglected, in a fast pace of life, parents torn apart in uncertain life conditions, a collision of different cultures and various media influences, all of which characterize the heterogeneous conditions of life of today's students. Teaching is under the strong influence of competencies and standards, on the one hand, and works of contemporary visual arts, works of different cultures and everyday visual information for which technical and visual requirements are to be met, on the other. Throughout history, artists have sought to improve the tools and media of their trades, experimented with new technologies, whether they themselves explored and experimented or used the inventions of others in their work, always sought to use new media, new innovations for their work. The importance of the teaching of fine arts is increasingly recognized in the world and in Europe, it offers students a useful guide to developing their creativity, imagination, sensitivity towards themselves and the world around them in mutual relation. In addition, the teaching of fine arts enables students to develop the ability to express themselves in a wide range of visual techniques.

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