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APPLICATION OF MODERN INFORMATION TECHNOLOGIES IN PROFESSIONAL FIELDS

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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. By utilizing new media resources, student's 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, student's can quickly see the results of their ideas. By applying ICT, the amount of work in creating visual information minimized, so students will have more time for creativity, collaboration, research and assessment.

The role of Arts in nowadays education and its significant function devolves the specific task of structural analysis through the organization of certain explanatory activities in strong relation with Arts. The specific educational exercise - in secondary education - postpones the ostentatious references and indicates Arts as an inner vision, leading to a real explanatory behavior, practiced especially in the theory of signs. The deciphering of the artistic symbolism aims to the meaning of the concept of interpretation and revelation of multiple senses, in virtue of certain legitimate values which are assigned to hermeneutics. As specific and valuable methods used in the actual Arts education, there can be mentioned: organizing certain activities in relation with the vector that connects the diffusion of the work to its particular meaning / interpretation, designing special "games" of oppositions and combinations within a system of units, but also introducing new technologies that confers the intention of approaching Arts and the related interpretative educational activities in order to offer to the students new meanings through the mediation of signs and works.

he overall aim of this chapter is to explore some of the pedagogical potentials, as well as limitations, of animations displaying complex biochemical processes. As a □rst part of our larger research project, a learning environment was developed where visualisations by means of 3-D animations depicted some of the processes in the carbon cycle. In the analysis, we describe how three groups of students made use of and reasoned about the computer animations. In relation to the aim, three salient themes are discernible in the video material of the students' reasoning; the risk of focusing the attention on misleading aspects of the animation, the possible occurrence of a form of isolated reasoning, and the students' varying understandings of what resources they are expected to use when performing a given task

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The use of ICT in music education has meant an educational revolution because teachers may design much more motivating and varied musical activities than when using traditional methodology (Frega, 1996; Giráldez, 2005). Music teachers must dominate strategies to integrating new technologies into their lessons in order to better develop students' competence in music. These strategies include interacting with multimedia (image, audio or video), knowing how to edit scores, using MIDI electronic instruments, or manipulating sound by computer.

Keywords: Information and communicative competence, Information and communication technologies, art, art education, software, music, actor, drama theater, cinema prepares, animation, manipulating sound, MIDI electronic instruments.

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".

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. Main part

"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.

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.

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.

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. Results and Discussions

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. 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.

The motivation of the students is essential in every lesson, in every subject. So is it with music. Didactical and pedagogical methods are always combined in a good lesson. ICT, as part of the didactic concept, can enhance students' motivation.In the high quality technical environment that computers and software provide, children are able to do activities that are not possible (or very difficult) without ICT; the same activities can also be worked out on a different way. Computers are also natural and 'friendly' tools for them, it is easier and more comfortable for them to work with he computer. This environment makes the children want to achieve more. The immediate feedback the children receive from the computer makes them want to work further and work even better. This feedback can be different of nature: in music history or ear-training it is basically a yes/no answer, while in composition it is that the children can see all composed parts together, and, more importantly, they can also hear all parts played together. This feedback makes them conscious and demanding about their own works. The personal feedback creates a situation where they are more able to work independently. The possibility of working independently (or in small groups, but in any case without direct and constant supervision) gives the children comfort to work and develops their confidence in music. The music that the children work with (in composition, as well as in ear-training, etc.) is played on high performing quality (and often also on high sound quality) in a computer-based music lesson. This, especially (but far not only) in composition, is also very motivating.

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.

All those components generate ways of symbolizations, perception and thinking, but also conceptions regarding the value, cause-effect relations, through people interactions. The panoply offered by new technologies instruments which are used in the artistic education provides important information about the stratification of the unseen part of the culture iceberg (Rocher, 1992) - ways of thinking revealed by norms, roles, ideologies, beliefs, values, symbols, artistic techniques. But an entire efficient process of teaching and learning that integrates ICT has certain features: • it is addressed to all students; • it includes knowledge and intermediate the comprehension of artistic/cultural phenomenon; • it forms abilities, skills, attitudes and values; • it is derived from the reality and integrated in all the studied disciplines in schools; • it values the resources of allocated time for artistic education and intercultural abilities; • it makes learning more pleasant and more relevant for the everyday life of the children and offers the opportunity to share information within a group/community; • it develops communication abilities with others (even in heterogeneously groups) and encourages respect and cooperation in joint projects and supports the social cohesion; • it ensures equal chances of participation for all the students involved in the educational process. Different types of ICT instruments can be integrated with large success in the artistic education, mainly multimedia products as: digital presentations, educational video-clips, electronic posters or sound files. At this moment, digital presentations and educational video-clips represent the most introduced objects in the educational process, by arts teachers. In this respect, the

presentations are frequently used due to their accessibility; they are more suggestive and easy to be followed by students with different levels of comprehension. For teachers, those instruments enhance teaching and learning, offering a series of advantages (Jones, 2003), especially on drawing the students' attention to key points of the lecture on which they needed to listen and take notes, or on better noting of critical points in the lecture when being consulting in advance (Armitage, n.d.). Also, the educational video-clips, through their diversity, make the world of art visible through sounds and images. Various types of clips are used in the training process (Ciascai & Marchiş, 2008): documentaries, reportages, movies with certain themes, movies with a biographic character, popularizing knowledge movies, selected materials from TV shows (edited according to the specific purposes).

In relation to the aim of understanding the pedagogical workings of the specific animations displaying complex biochemical processes, three salient themes are discernible in the video material of the students reasoning. The first concerns the risk of focusing the attention on misleading aspects of the animation, a problem in some respect related to the design of the technology. A second problem observed is the possible occurrence of a form of isolated reasoning, seemingly connected to the simplified nature of the representations. The last observed problem is the students' varying understandings of what resources they are expected use when performing a given taskBarak, J., Sheva, B., & Gorodetsky, M. (1999). As 'process' as it can get: Students' understanding of biological processes. International Journal of Science Education, 21(12), 1281-1292

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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