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OBJECTS DESIGN THAT RELIES ON THE MOTIVATION OF TRADE DOCTRINE

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1. Introduction

The world in graphic engineering is turning today towards interdisciplinarity and fast technological changes towards digital techniques. We realize ourselves that the upgrade and knowledge design is a bare necessity in the graphic trade if we wish to remain competent on the labour market. Knowledge gained through a graphic artist's education disuses quickly, and we are already facing a question: How do you efficient refresh that knowledge in printing? The answers can be found in: planning and lifelong learning. Lifelong learning has a key role in achieving a fast and high quality of specific social skills in learning/teaching graphic technology, which are directly useful in everyday practice and development of graphic artist's career. How to design a base for quality and development of new needs for motivational educational programs and self-learning e-learning in graphic trade?
Planning of learning from the future, or more precisely, planning of the learning from the immediate future is a discipline in printing that allows individuals, groups and organizations the way of learning with which they could change their activities according to making of the future in printing.
That is a kind of addenda to the learnings from the past or past experiences of graphic technology and printing. There is a need for new, designed ways of learning by using new graphic technologies in today's dynamic business situations. New situations that we can no longer learn from the past experiences. That is why we are in a search of answers to challenges that have never been a previous experience. "We do not have time to learn from the experience, making a lot of our most important decisions is direct doing" as it was said by Peter Seng. We must admit that we are leaving the past, people want something else, something innovative that they don't have and what they need in the future of graphic technology and printing. A deeper learning cycle is based on planning the learning on innovations and feeling the future of graphic technology and printing especially with the growth of the Internet, and as school networks they allowed the use of innovative and motivational learning of graphic technology.
Networks in classes for learning and teaching graphic technology are becoming a means of exchange and distribution of resources such sa materials and programs, for teachers and students, sources of information of on-line communications as: - emails, - forums, - e-conferences, - collaborative tools.
Networks are an opportunity for both teachers and students as a resource for complementary and for additional planning of new education, research, any help, etc. So, the precondition is a society with mass use of home computers, the Internet and web sites. The emphasis of having a personal computer at home is the beginning of planned electronical learning which changes the educational system, teachers, methodology of teaching the graphic technology and it goes deep into the transformation of the whole educational system.

2. How to define the goal of teaching in graphic technology and printing?

Do we ever realize the importance of full understanding of entire purposes and the goals of teaching graphic technology and printing is? As a young teacher, I started asking myself quite soon what the purpose of me being in the classrom is. The goal is that students master the study matters, the purpose is for them to develop an interest for further education. Can we set up such goal? Yes, that is a specific and poorly set up goal. From the consequences of a poorly set up goal, people can lose their jobs. If our role and goal is bare mastering of curriculum material, we can easily predict numerous influences that will disable us from achieving it. That set goal is not good because it is focused solely on mastering the curriculum material on graphic technology and printing. In our case, the goal should be to motivate our students as much as we can so that they can learn how to use and develop their skills with a help of innovations on the graphic area. We know that it takes hard work to learn how to achieve that goal. In short, in the process of planning the learning of graphic technology in which, among other things, an important role have processes of thinking, we always find a certain level of independence, from very low to very high. R. E. Hull says: "When a school determines both the goals of learning and the media by which they will be achieved, it is called self-directed learning. In cases where the student determines the goals, and the media is determined by the school, we are talking about personalized learning. If the student determines both what he will learn and the way he will learn, it is called independent study." As we can see, R. E. Hull differentiates learning according to the levels of independence, taking into consideration two elements: goals and means (media) of achieving those goals. Here as well, as in many cases, the name is chosen by negotiation. The atmosphere in class is also important. To use all the possibilities of learning graphic technology and printing and to achieve the goal, students have to feel good and comfortable at school. The environment should be positive and they should accept positive life attitudes. Students at school need an environment that will help them find their identity, go through the adolescence phase and to achieve their own personal quality. If they don't have that, frustrations, insecurity and problems that come from the families are growing bigger or they are pushing them towards aggressivity, delinquency and addiction.

3. Teachers' motivation as a precondition to success

It is obvious that motivation is of essential importance to succeed. How can a teacher successfully motivate? We influence the motivation in different ways: by marking, motivating the class atmosphere and by innovative motivation. Therefore an answer cannot be arid as: "This is according to the program, and they demand from me to teach you that!" The most important motivational reason for learning is natural curiosity, as well as a desire to learn something new. The goal is to intrigue the students with the most recent accomplishments in graphic trade. They have to start dreaming about it because they like it. Students will be happy to accept studying if it is interesting to them. They will not bother to ask if they will need that knowledge later if the designed innovational e-material and the way of learning as New eLearning is interesting to them. It is important that the teacher presents the material in the most interesting way possible. It is good that the classes are dynamic and that as many motivational means for help in class are being used, such as the Internet, photographs, innovations in graphic trade. The class has to be designed in a way that the students complete a certain exercise by themselves or in a group and present it in front of the whole class. What they do themselves is very encouraging and they present something they created themselves with much more love, effort and joy. If the students and the teachers find a certain subject or way of teaching interesting, it is easy to motivate them for studying – if we teach them to make something new because they find it interesting. The teacher has to motivate, give interest for further learning.

By accomplishing our goal, students realise, develop and use their skills to get good marks. If they get them, they get them not because someone gifted them, but because with good motivation they used their abilities to learn graphic technologies broadened via new eLearning admission. Studying is a hard intellectual work. You cannot force anyone to learn something he doesn't want (as it is hard to stop someone from learing something he really wants). Really, if we want to teach our students to study about graphic technology in their own free will, we need to motivate them. Force doesn't give any results. If we can assume for sure to demand for changes, we need to achieve graphic e-literacy for

our students in order for them to successfully function in high-tech society. In a high school syllabus and program, the teacher has to be the motivator focused on the trade. That poses a key question – can we put that in work? The graphic trade teacher needs to design the class by reducing or increasing the complexity of his questions, until he gets the proper answer speed and quality. That method is essential but not sufficient. That is why a student level has been introduced. It is defined in a way that students can use a survey to define wanted problems on a set model. (Žiljak V, Žiljak I, Pap K., 2005).
Based on serious results of modern scientific researches, it appears that in traditional class the teacher is central frustration of many. Every teacher, if creative, will develop his own strategy. Teaching is somewhat like art. Beside knowing the techniques, it demands an intuition as well. How do we successfully know how to motivate the students the best we can for learning graphic technology and printing? The goal should be to create, design such environment for students to use and develop their skills in learning with the new eLearning the best they can. In that way, the syllabus in graphic trade would be realized. While working with students, we need to remove the force as much as we can. By force, you cannot achieve good results with students. The teacher will need to motivate, interest the students for learning with innovations in the graphic trade. It is important to present the matter in an interesting way and suitable for their skills. If we keep encouraging our students and with our way of teaching we motivate them to study, they will achieve great results and that kind of work will bring satisfaction to both the students and the teachers. The teacher can use the new e-material for designing graphic technology and printing as: encouragement for work, additional information that supplement and upgrade the given information in a student or activity book, as a source of innovation, animation, sound, photography and film. The teacher can promote monitoring of other practical activities in the classrom, or outside in the nature. The teacher can plan the road of individualisation and differentiation in the class, relaxation and fun. Dr. Joe Boland said: “Teachers leave the stage of wisdom and become guides that stand aside.”

4. Innovative contribution by using computers

Using the computers and eLearning gives evidence about motivation and innovation of learning and teaching the graphic trade. Most of the teachers agree with the idea that by introducing computers as a learning tool, motivation is being largely improved. With eLearning the things that have been learned as the means of expansion and implementation are being applied. Introduction of computers helps the teachers to make the teaching subject more interesting and to transfer their enthusiasm to their students. Also, teachers can introduce teaching changes that are connected to technology of integration. They can set up more challenging goals with a high evaluation of suggestions, meaning, to better present more complicated materials in the sphere of graphic technology and printing which are being adjusted to the students and their individual needs. Teachers use the computer as a “dramatical” increasement in self-respect and motivation of their students. Teachers in graphic trade also use a spectre of efficiency of development of technical skills. They involve and accomplish a greater number of complicated tasks. The increased use of information outside the source, improved creativity, improved communication skills. Advantages of a computer classrom are being used as the main motivation for innovation in graphic practice. In that way, scholastic tools are being given to expand students’ experiences and improve their performances. They are also used in promoting students’ independence and collaborative work. Projecting and designing the class, by using a combination of the Internet and New eLearning enables a more interesting learning, which is also interactive, integrated and independent. Informational and communicational technologies have created an environment suitable for collaborative motivational learning and for participation between the students [Fong-Ling Fu, et all. 2009]. With this paper we are trying to examine the design and development in the atmosphere of the motivational learning in the web-based learning context on innovations in graphic trade. The experiment will be carried out on the high school level with students that create an atmosphere of competitive and collaborative learning. In that atmposphere there will be changes and differences in learning and enjoying the learning about graphic trade and printing. The results will show that competition (defined as participation in a group, competition between the groups) is the best learning strategy because it encourages competition and collaboration between different types of knowledge. Competitive learning in this atmosphere will

encourage the students to develop greater analytical skills, while the atmosphere of collaborative learning will show the students' synthetic skills. [Fong-Ling Fu, Ya-Ling Wu, Hsi-Chuan Ho 2009]. Since both atmospheres contribute to learning, this research will show that combining in pedagogy in building the atmosphere for learning, does not only contribute to analytical and synthetical skills, but also brings to the general level of knowledge about graphic technology and printing. It is important to emphasize that planning and creation of studying environment which consolidates new motivational informational and communicational technologies, achieves a pedagogical aspect of increasement of the level of knowledge on how to learn graphic technology.

5. Traditional graphic technology classroom

In a traditional classrom of graphic technology, graphic preparation, printing and graphic processing put many vocations into one. In graphic preparation those are: text editing, picture scanning, digital cameras, archiving of pre-printed materials, transformation of record format, electronical graphic compression, usage of computers, planning of how the imprint will act in the printing machine and processing, waste planning and planning of printing and cutting, making decisions about relations between process and spot colours, planning of the method of colour separation depending on circulation, type of print, purpose of the graphic product, designing of the inner and outer image of the graphic product and many more. In printing, those are: graphic techniques – conventional and digital, sheet printing and role printing, varnishing, numbering, print for special purposes–packaging, labels, folio print, print on different materials for special occasions. In graphic processing that is: bending, encapsulation, cutting, printing, gluing, binding, sewing, perforation, counting. Special group contains works in which some things are hand made. Printing has in the past twenty years experienced a few unsuccessful pre-qualifications of its employees for the purpose of introducing the digital print and computers into graphic preparation. In the occupation's integrations many skills are not actual any more, many skills will not be needed anywhere anymore and there is a need for new skills. The new learning organization after schooling and life long education is expected in the concept of eLearning. Studies about the printing future are very modest and are mostly dealing with variables that in any case do not have any stronger changes (Žiljak, 2004). In prof. Žiljak's (he comes from the Faculty of Graphics Arts) demonstration, he proposes an organization of a knowledge base for the area of pre-press and printing as well as incubating software and hardware simulators for the area of graphic engineering. Simulation brings a new view on learning processes of graphic technology. Traditional learning and training of graphic production methods are becoming too expensive and inefficient. They developed a digital system of describing printing processes. Program support has been supported by data bases and algorythms that describe a virtual printer. The suggestion was to introduce a hybrid method and learning techniques in typography, reprophotography, printing by stating it is the best way to successfully train a graphic artist. Even after the mandotory education has been finished, simulation is the most efficient method for the later education. Simulation should be included in the syllabus so that the employee would start learning dedicated, new programs, after his school hours, by himself. With students a system of gaining knowledge through (as possible interactive) web/ Internet technology should be developed in a way that students and teachers can create scenarios of simulation models because only them can pose profound and complex questions and tasks. Simulation development in graphic education will continue. The best way is to direct the development towards the visual, interactive, multimedia programming. Simulators were created more as a part of some scientific or expert project and less as an order for some real printing procedure. Printing house which mostly produces books is completely different from the one that, for example, produces newspaper. Printing office that produces packagings is very much different from the one that, for example, whose graphic products are security papers and protected documents. To this huge diversity only some "new method" can help. The new learning organization after schooling and life long education is expected in the concept of eLearning. (Žiljak, 2004).

Table 1. News in graphic trade

TRADITIONAL GRAPHIC TECHNOLOGY	NEWS IN GRAPHIC TRADE
PRE-PRESS	
Hot type	
Photo type	
Computers – simple programs	Computers – newer computer programs (word, indesing, photoshop, corel drew, illustrator) A software tool that uses two pictures has been developed – Irdesign Computers
Typography	Web typography, creating of virtual layouts with new designer solutions, microtypography on securities, table type, programs for aesthetic typesetting of the text
Reprophotography – uses expensive materials, prepares the film for DTP systems	Realistic systems combined typography and reprophotography New raster elements
Chemistry – printing plates	Chemistry – completely defined by the plate buyers - pigments area
Chemigraphics – manual mounting	Chemigraphics – automatic mounting
	Immediate editing - iterration
PRESS	
Conventional press	More types of digital press
Newspaper production	Hybrid rotation
POSTPRESS	
Djelomična automatizacija: Partial automation: Printing, bending, gluing, cutting, binding, sewing, perforration, counting, binding in different ways, manual postpress	Infiltration of supplements More precise bending Partial automation High automation in newspaper production Specialized printing houses (complete automation) Multiple way of finalizing the product Automated procedures in packaging Manual setting for smaller circulations (hollographics)

6. Designing a simulated learning of graphic technology

Simulators have been used in the approach to learning a great number of vocations in prepress, printing and postpress: by phisical models and video films, programs and interactive training and exercise modules and systems. However, today in printing it is only a demostrative level, a unique one. By planning a simulated learning of graphic technology and printing from virtual to physical is a concept of teaching and learning, in which by combining and mixing of different educational styles and by using different classroms aids (computer, IR camera, IR scanner etc.) we are affecting the duration and quality of the graphic artist's education. That plays a key role in the ability of motivations focused on the future. Simulated/virtual style of learning graphic technology and printing is based on many different methods that teachers can use for teaching plans. Mixed learning and simulated style of learning prefers: on the one hand, by integration of a wide spectre of homeworks and activities in the class about teaching graphic technology, and on the other hand, using computer technology, interaction between students and teachers, and between students. (Žiljak V, Žiljak I, Pap K. 2004). New informational and communicational technologies and designing of simulated learning of new models would start a new wave of innovations in the education of graphic artists and eLearning. From

classic classroms to a simulated learning with a help of innovations in graphic trade, results can be radical between students and teachers. That would lead to a drastic change between technology and design of models of learning graphic technology and printing. For successful designing and using of New eLearning in graphic trade, perspective dynamic performances and a defined agglomerate of basic abilities is needed. The results need to be submitted to the educational establishments in order for them to widen their understanding of the new eLearning on the innovations in the graphic trade. The results need to give guidance to help eLearning collaborators adapted from traditional classrooms with surroundings in the eLearning printing.

Acknowledgement

A greater agreement between the theory and practice is important, and today's results show that a greater advancement can be achieved. We have to make an effort in designing a concrete choice of a syllabus of graphic technology. Considering the surroundings in the graphic trade, we need to plan the learning schedule: most of all a decision about learning goals, allocation of teachers' and students' roles and motivational and innovational e-material for learning graphic technology and printing. And finally, knowledge should be focused on a change of efforts and beliefs that the teachers need to acquire in order to create motivational surroundings for learning that encourages New eLearning in learning of graphic technology.

The research would show that at least two aspects of planned learning and surroundings are of crucial importance: increased knowledge in the process of learning on innovation as a goal of motivational learning and bigger attention to the students' role. Intelligent systems of e-learning in graphic technology belong to a category of e-learning where the process of learning and teaching are asynchronised. Sometimes this type of learning is called devided learning because the systems built for this kind of learning consist of re-usable components which diminish the price of their implementation. The subject's goal is that a student imagines the future of the development, to experiment with it and makes a research. Students need to develop imagining the future development of the subjects they are learning about. Students that actually develop that will be able to enjoy the confirmation of their development predictments.

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