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## ONLINE EDUCATION - MODELS AND STRATEGIES FOR CREATING ONLINE LEARNING COURSES

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### ABSTRACT

Widespread use of digital learning resources in the creation of online training courses enforce adherence of some pedagogical principles and strategies. The aim of the current work is to track the relation between different models for pedagogical design, tools used for creation content and ways for managing online training courses. In this digital age teachers have a new role which requires knowledge of the opportunities offered by various Web 2.0 tools and how they could be used to achieve maximum efficiency in the implementation of the learning process.

**Key words:** online education, online training courses, models, teaching strategies, pedagogical design

### INTRODUCTION

Dynamic changes in the contemporary information and communication technologies have a tremendous impact on education. Widespread adoption and use of e-learning reflect the teaching and learning resources, and the roles of the participants in the learning process as well. This poses new challenges to teachers who have to not only carefully select new tools to achieve educational goals, but to constantly cultivate and acquire new skills and abilities. Delivering on the learning process is necessary to observe the basic principles underlying the theories of teaching and learning.

**The aim** of this work is to present the steps in creating online training courses according to different models, based on modern technology and teaching methods.

One of the researchers in the field of e-learning, namely Badrul H. Khan describes its framework consisting of 8 elements – Pedagogical Support, Technological, Interface Design, Evaluation, Management, Resource Support, Ethical, Institutional Support. (1).

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According to him, **pedagogical support** of e-learning involves the following elements:

- Content Analysis
- Audience Analysis
- Goal Analysis
- Medium Analysis
- Design approach
- Organization
- Methods and Strategies

Ideas of **pedagogical design** which aims to design and create situations for more effective training, adapted to the needs of the students stay at the heart of educational support.

Learning strategies based on theories and models of learning are built through pedagogical design.

### 1. BUSINESS MODEL

Creation and maintenance of online courses are directly depended on the business model of the institution. In the current economic climate, any university or school strives to be competitive, to offer new and interesting courses to meet maximum requirements and expectations of students. More people need to increase their skills and seek opportunities for this according to their individual workload and working schedule.

In this business model training can be seen as a product. (2)

Usually an online course depends on:

**Demand** – the preferences of students towards attractive and modern disciplines that help them on the labor market.

**Supply**- depends on the area in which the institution is located, which is a priority area (economics, tourism, agriculture) and the corresponding base available for the institution. Competitive environment - this is the main driving force for improving the quality of training and attracting more students. Continuous updating and changing in response to the new technologies and learning methods are prerequisites for successful business strategy in this area.

Within this framework there are several key components - creators of online training courses (teachers, programmers, designers), consumers (students) and institutions whose support and assistance made all this happened. This shows that learning is a continuous process that changes dynamically according to the requirements and expectations of consumers.

## 2. AML Model - Active Mastery Learning Model (2)

The process of learning is seen as a complex sequence of activities that lead to a greater success in achieving objectives. One of the main tasks of pedagogy is to learn how to learn, so this process is not linear and one-way, but rather complex and dependent on many factors.

Some sources mention seven basic principles for a successful online learning (2, 3):

- **Encourage Contact Between Students and Faculty** - the relationship between a student and a teacher is crucial for students' motivation. Modern Internet technologies facilitate this communication, especially for shy students for example.
- **Develops Reciprocity and Cooperation Among Students** - teamwork contributes to a greater motivation and responsibility. Each of the participants in the group seeks to contribute to the success of the project. Technology offers synchronous and asynchronous communication and resource sharing tools for remote users.
- **Uses Active Learning Techniques** - use of IT support active learning that is embedded in

the theory of constructivism. Using different tools and services they can evaluate the information they are given and they can reach new levels of knowledge.

- **Gives Prompt Feedback** - feedback is an essential element through which one can check the knowledge acquired and whether the student is on track.
- **Emphasizes Time on Task** - when students work in teams, they try harder and therefore spend more time on the task. Time spent on learning depends on the knowledge accumulated by the student.
- **Communicates High Expectations** - according to some researchers setting achievable goals consistent with the intellectual abilities strongly influences learners' motivation.
- **Respects Diverse Talents and Ways of Learning** - each student has his own pace of learning and ways of learning. Some prefer to work alone, others in groups; some remember and utilize the materials more quickly and easily, while others manage to do that slower. It is, therefore, important that these individual characteristics to be considered when the course is created.

Main idea that supports this model is that the core of the training should rather be the pedagogical principles and not the technology. Technology alone will be useless if there is no strategy for their use.

The main elements of the model are three: **Interaction, Active Application, Content Mastery**.

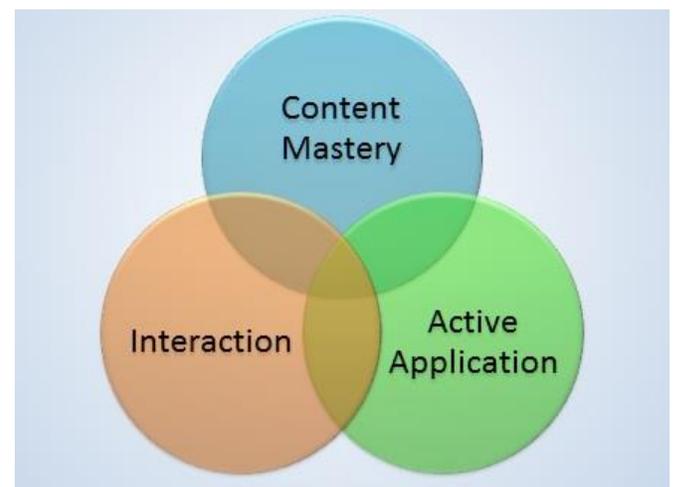


Figure 1. AML Model

**Interaction** – it represents the communication between students and teachers and among students. It is particularly important because of the feedback we receive when we get the completed assignments or answer their queries. Building communities supports teamwork and group projects.

**Active Application** - the use of technologies that meet the goals of constructivist theory create lasting knowledge. These are applications that

promote collaboration, work on real issues and solving problems.

**Content Mastery** - to allow students to properly handle information and to create appropriate content they should be actively involved in relevant activities. Real projects and those connected to practice are preferable.

### 3. E-LEARNING P3 MODEL



Figure 2. E-learning P3 Model

This model is defined by Badrul H. Khan and describes the structure of e-learning as a liaison among the participants in the learning process itself and the product that is realized (PEOPLE - PROCESS - PRODUCT). (4) In the model the relevant participants **Planning Team, Design Team, Production Team, Evaluation Team** and their roles are clearly stated, and sometimes they may overlap.

In the **Planning** stage Planning Team has a task to draw up a plan in which the analysis of the participants, processes and products in the e-learning and the time necessary for the performance of individual tasks are reflected. This plan describes not only the financial and marketing strategy, but must satisfy the educational requirements for successful implementation of e-learning.

Result of the **Design** phase is the preparation of storyboard and everyone working on the project has his tasks and responsibilities. For example, experts in the field of pedagogical design must consider what activities can be included to achieve educational goals, or what assessment methods to be implemented; others are responsible for deciding how to present the material in an accessible manner in a friendly environment.

Then, in the step of **Creating** developers and others who are involved in this stage create online courses. This step takes the longest time and the work of each of the specialists depends on the skill of the other. Participants can be located in different places, so it is better to have constant communication and activities to be coordinated. Material developed for the course is ready for testing by a group of students who are

able to write comments what works and what does not.

This enables the person skilled in the **Assessment** stage to use this feedback to revise and improve the teaching material.

**Delivery and Maintenance Stage** - All materials should be available to everyone, wherever they are located. Group of specialists mainly monitor and maintain LMS and database and provides technical support of the course. A set of well-defined and structured teaching materials is the final result of this stage.

**Instructional Stage:** Pedagogical and technical staff is involved at this stage. They communicate directly with students who expect uninterrupted and facilitated learning environment.

All this gives a clear idea how important the selection of appropriate specialists and team work is. The basic principle that must be observed is that the learning material should not be made randomly. It should be a system of planned activities that leads to the successful achievement of educational goals, objectives and needs of the students.

#### **4. MODEL ADDIE - ANALYSIS, DESIGN, DEVELOPMENT, IMPLEMENTATION, EVALUATION**

This model associated with instructional design is one of the most common models. It has a lot of variations and modifications.

The process of creating online courses goes through several stages. They define and describe appropriate pedagogical principles that should be followed. (5)

##### **4. 1. AUDIENCE ANALYSIS**

It takes place before the beginning designing the course. It defines whether the course is suitable for online presentation with the capabilities of current technology. For example, content that requires physiological manipulations and real laboratories can be difficult to teach and evaluate.

Another important point is the identification of areas of knowledge and skills involved in achieving educational goals. Examples:

- Conceptual learning requires collecting and organizing information;

- Cognitive skills required problem solving and critical thinking;
- Psychomotor skills require practice and manual experience;
- Construction of opinion requires role play situations

The personal characteristics of the students, intellectual skills, level of knowledge and the purpose of using this course have to be defined. When designing a course it is important to know who intends to use the course and how the knowledge gained in the course will be used.

The technological skills of the users and their previous experience with online courses are analysed. It is important not to assume that all users are on the same technological level. Self-assessment is one of the convenient ways to check the skills of students and their willingness to participate in online course. Available online tutorials are also an opportunity to improve students' skills in using new technologies.

##### **4. 2. GOLS AND OBJECTIVES**

Goals and objectives of the training course must be formulated clearly and accurately. They should be accessible from the first day of registration in the course and are the main point of the curriculum of online courses.

Teacher's tasks:

- select course content and define its structure;
- implement appropriate learning strategies;
- planning the activities;
- define the evaluation procedures.

##### **4. 3. PEDAGOGICAL ACTIVITIES**

Specific educational activities should be aimed at providing the students with the necessary skills, knowledge and experience required to meet the course goals and objectives. This stage should include learning activities that engage students in active learning and use strategies which comply to individual learning style. A good solution in this regard is to use Wiki, blog, podcasts, e-portfolios, working on individual or group projects, case studies, discussions and more.

It is essential content to be consistent and structured in a way that enables students to achieve the course objectives.

Some of the materials prepared for classroom usage may turn out to be unsuitable for online format. This requires that they should be translated and adapted appropriately for such presentation. When selecting course materials they should be thoroughly evaluated in order to be useful in achieving the learning objectives. In the selection of course materials teachers need to observe copyright laws and to cite correctly relevant sources.

Educational activities should improve communication and interaction among the participants in the learning process - teacher-student and student-student. Such interaction is an essential part of the online course. By using different technologies it can be achieved an overcome of the isolation participants can experience during the course. Communication can be synchronous and asynchronous carried through e - mail, bulletin boards, social chatrooms, phone conferencing, instant messaging, Wikis, Blogs.

#### 4. 4. EVALUATION

Methods and procedures for formative and summative evaluation of the course should be carefully planned in the design of the course. Formative assessment can take the form of assessing the learner, communication with students and periodic evaluation given to students. Summative assessment may include an analysis of formative assessments, tests students, surveys and interviews with students. An important part of the evaluation is to maintain feedback from students during the semester. Many systems ANGEL, Blackboard, Desire 2 Learn, have this feature - to keep a book of assessments and other components that can be used to store scores and to track their learning progress.

Methods and procedures for the assessment of student learning must be clearly defined and directly related to the particular object of study. These methods should be similar to educational activities and they have to help educate students to achieve the learning objectives.

Using diverse and frequent self-assessment tools and tests on the lower level provides good feedback and show the level of student knowledge.

According to Bloom's taxonomy cognitive learning is divided into 6 levels of hierarchy: Knowledge, Comprehension, Application, Analysis, Synthesis, Evaluation. Achieved level of cognitive training depends on the type of activities involved. They must be arranged in proper sequence.

Continuous evaluation and constant feedback allows the teacher to correct the problems with the design until the course is developed.

#### 4. 5. TEACHING STRATEGIES

They should reflect the personal philosophy of the teacher, his skills and knowledge. The main characteristic of effective online teaching strategy is that the trainers are placed in the center of the teaching process and are encouraged to be more active. The teacher acts as a facilitator and supports the absorption of the material.

According to a survey (6) the most popular methods of online learning are Group problem-solving and collaborative tasks, Problem - based learning, Discussion, Case-based strategies, Simulations or role play, Student-generated content, Coaching or mentoring, Guided learning, Exploratory or discovery, Lecturing or teacher-directed activities, Modeling of the solution process, Socratic questioning.

#### 5. WEB 2.0 LEARNING MODEL. (7)

This model includes all the well-known Web 2.0 tools and technologies specific to the new era in ICT. Those are dynamic, daily changing and tools that allow users not just to be passive consumers of information, but to participate actively in the process of creating it. That's why they are very good tools to achieve efficiency in learning.

##### **Their main characteristics are:**

*Accessibility* - with the increasing number of mobile devices, tablets and ubiquitous Internet connection users have access to these services anywhere and anytime;

*Easy to use* - most have friendly interface and the cloud computing allows to work without installing special software;

*Support* - the ongoing renovation and maintenance provides new job opportunities and stimulate consumer interest and encourages them to engage in the development of new products;

*Price*- Most of these Web 2.0 tools are free and this characteristic provides the use of a wider audience. Of course, some of their specific features are paid, which funded the project and ensure its development.

There are many examples and best practices in targeted use for achieving different levels of knowledge in Bloom's taxonomy, which can be seen in the following diagram:



Figure 3. Web 2.0 Bloom's graphic

Resource  
 (<http://edtech2.boisestate.edu/candacemcenespy/Images/vectormap.gif>)  
 Many tools can be used at different levels of this taxonomy, depending on the objectives the teacher sets and what he wants learners to achieve. (8)

**Blogs and sites** - creating a blog or website shows the potential of students for their own thinking and creativity. They can be used in the **evaluation** level where the basis of accumulated knowledge and experience can participate in creating something of their own, which eventually would be useful for someone else. Transmission of knowledge and experience is one of the characteristics of the collective constructivism.

Working on common projects and documents with **GoogleDocs** and **Zoho** as well as the generating and sharing knowledge through **Wiki** contribute to community development. These funds can be applied for classroom training and distance learning.

Department of "Informatics and Mathematics" at the Faculty of Economics, Trakia University has extensive experience in the application of these technologies in the teaching of some subjects. (9) The use of the **Just In Time Teaching**, which is characterized by active academic learning was combined with Wiki. The idea was connected with the creation and filling of content during exercise. The goal of this type of methodology is students to become familiar with the topics before the new lessons, and to give

their ideas and contribution to the updating of the information.

Replacement of standard office programs with new cloud technology for sharing documents, presentations and group projects (GoogleDocs, Zoho, Prezi, Dropbox) makes young people more flexible, open-minded and easily adaptable to them. The aim of the training is to shape a new consciousness, a new way of learning and sustained accumulation of knowledge and skills. Social networks are playing an increasingly important part of the communication among users with similar interests. Known and used mainly for fun and games they offer many other options for helping the teacher how to organized the course by using these tools. QR Codes and Augmented Reality (AR), which main use is in the world of business and marketing strategies, rapidly enter this training.

The knowledge of these agents increases the interest of the consumers and it learns them to be more critical and more responsible. The role of the teacher is of particular importance and he is the one who can change their attitude and show the new capabilities of these technologies. The application of this model of learning helps students to apply their knowledge in their work and be more competitive.

## CONCLUSIONS

Important role in the construction of an on-line training course is a team of professionals who can design, create and maintain, but the main driving force that pushes students to reach higher levels of knowledge is motivation. Therefore it is very important that the rate offered is sufficiently useful and bound to reality. Consideration of the real issues and problems, the use of new technologies give confidence and ability to apply knowledge and skills in practice. Each of the models gives priority to active learning through engaging activities according to individual abilities, goals and motives of the student. This in turn changes the status quo of teachers who need to change their teaching methods to be more flexible in a competitive environment and to be familiar with the capabilities of modern technologies. But the most important condition

for their successful online learning is the right pedagogical design and the right approach to implement the goals and objectives of the course.

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