

VARIOUS ONLINE RESOURCES FOR DEVELOPING INTERACTIVE TEACHING MATERIALS USED IN TEACHING-LEARNING-EVALUATION WITH INTERACTIVE WHITEBOARD

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1. INTRODUCTION

Diversification of teaching-learning-evaluation process has a beneficial effect on the learner. Recently has appeared a new method of teaching, learning and evaluation with interactive whiteboards. This method has several advantages [3], but also difficulties in its implementing in various educational institutions. The appearance of new informational technology for teaching, learning and evaluation has provoked disputes of its effectiveness and, in particular, problems with creating interactive teaching materials for use with the interactive whiteboard.

Frequently, informational technologies in education are an obstacle for many teachers, both for those with teaching experience and young professionals. The basic problems in this regard are "fear" of computer, poor level of information and a relatively high degree of complexity of developing interactive teaching materials.

This study is trying to search for solutions to the problems above, by presenting to the reader the various online resources for easy developing training materials for the interactive whiteboard. So also are presented the stages of development of a lesson with interactive whiteboard use, selection criteria of information for interactive teaching materials, problems arising in the process of developing interactive teaching materials.

2. THE STAGES OF DEVELOPING OF A LESSON WITH INTERACTIVE WHITEBOARD USE

Interactive whiteboards increase the effectiveness of teaching material. The most important problems in implementation of interactive whiteboard in higher education institutions occur in the process of training the teachers in the use of this equipment. Most of the problems facing the teachers in designing of electronic materials are related to lack sufficient skills in information space design and a user interface which provides creating

effective structures appropriate new methods of information representation. To facilitate the assimilation of such technologies as interactive whiteboard, it is necessary to assimilate technology itself (using a guidebook or attending training courses) and learn to use interactive materials existing, practically, in all specialized educational software, and to adapt them to own needs. Most of the interactive materials stored in galleries of specialized educational software can be adapted to personal needs. In addition, there are plenty of online resources used to create new interactive teaching materials based template, some of which will be proposed to the reader further.

Preparing an effective lesson with interactive whiteboard use requires a serious effort from the teacher. The elaboration of an effective lesson with interactive whiteboard use involves the following **steps**:

1. Identification of subject, purpose and type of lesson;
2. Lesson planning timeframes to achieve the proposed objective;
3. Making the stages of the lesson that require interactive whiteboard instruments (generally it is not mandatory to use the only interactive whiteboard during the lesson, it should be used when it is useful);
4. Selecting the resources of developing interactive learning materials;
5. Examining the appropriateness of their application compared to traditional means;
6. Selected materials are measured in time, as not to disturb the path of the lesson (step 2) and be consistent with sanitary norms;
7. In case of insufficiency of tools for developing interactive materials in specialized educational software and in a teacher's computer, their search is performed through Internet resources and services (some of which we list below);
8. Elaboration of the project of the lesson in a specialized software, as SMART Notebook;
9. Preparing the students to percept the material of the lesson to be taught by using an interactive whiteboard;
10. The lesson.

An interactive whiteboard can be used without specialized software; in this case, it can be used as an ordinary screen for projecting computer images.

Interactive teaching materials used with the interactive whiteboard must comply with some **requirements of selection of information**. Some of these are:

1. Content, depth and volume of scientific information must comply with the cognitive skills and the performance level of students, to consider their intellectual preparation features and age;

2. Selected or elaborated teaching materials should not contain small size details for more comfortable visualization by the students;

3. Images displayed on the screen must be logically related to accompanying text. They must appear in a logical, well thought consecutive order, at an affordable rate for. The accompanying text must be clearly and accurately;

4. Avoid the large fragments of text. To read the text should not be used scroll bars or buttons to navigate from page to page;

5. The user interface should be intuitive;

6. Highlighting the important text fragments, using different colors or bold and italic style.

The value of using interactive teaching materials in teaching, learning and evaluation:

1. Activization of cognitive activity of the students;

2. Evaluation with the feedback, detecting of errors through the occurrence of appropriate comments, according to the results of their work and marking them;

3. The training in the process of assimilation of study materials;

4. Enhancing motivation for learning;

5. Formation of culture of the training activity and information culture of society;

6. Activization of interaction of intellectual and emotional functions by means of common solving of research problems.

The problems that occur when designing interactive materials:

1. Insufficient knowledge of computers and information technologies or "the fear" of computers;

2. The gaps in knowledge of interface and working methods with specialized software which works with interactive whiteboards;

3. Insufficiency of models of interactive teaching materials in the gallery of specialized educational software used with interactive whiteboards;

4. Existing interactive teaching materials do not meet the requirements and needs of the teacher.

3. THE ONLINE RESOURCES FOR ELABORATION OF INTERACTIVE TEACHING MATERIALS

In order to solve the problem of insufficiency of interactive teaching materials in the gallery of the specialized software designed for the interactive whiteboard and the problem of unsatisfactory of materials from the gallery the requirements and needs of the teacher, we shall propose a list of online resources that will help the teachers use interactive teaching materials in their activity and to elaborate them independently.

There are various **online resources** that facilitate the teacher's work on materials with interactive whiteboard lesson project [2]. Among them we can distinguish:

1. **HotPotatoes** – is an application used to create the visual, interactive exercises, just for elaboration of electronic test. The application is free, free to download from the website <https://hotpot.uvic.ca/> [1];

2. **ClassTools.net** (<http://www.classtools.net/>) – online service for creating of the interactive Flash resources and educational games. There is the possibility of saving of the games on the computer as a .htm file. Most of the educational games can be used with the interactive board. To get started the authorization is not required. The service is in English;

3. **BrainFlips** (<http://www.brainflips.com/>) – the online service for creating cards. Into a card, we can add video, audio and photo to activate all the channels of assimilation of information. The service is in English. To start working with him authorization is required;

4. **Flashcard Machine** (www.flashcardmachine.com) – the online service for the preparation of educational materials in a form of sets of cards. The materials on the cards can be in the form of text, images, audio and links. It requires the authorization;

5. **JeopardyLabs** (<http://www.jigsawplanet.com/>) – the online service designed to generate the thematic questionnaires. To work with him does not require the authorization, it is necessary only to enter the password for editing. After filling in data the service offers a link to the questionnaire;

6. **JigsawPlanet** (<http://www.jigsawplanet.com/>) – the online service for the generation of puzzles. Authorization is required. Can be created puzzles different by complexity and form that can later be merged into

one album. The author can provide the common and private access to the created materials;

7. **LearningApps** (<http://learningapps.org/>) – the online service designed to elaborate the methodological, teaching tutorials for different subjects. It is based on working with templates. This service requires authorization;

8. **PurpozeGames** (<http://www.purposegames.com/>) – the service for creating of the thematic games online. Authorization is required. Accordance with the results of the game is carrying out the evaluation;

9. **Study Stack** (<http://www.studystack.com/>) – the online service for development of teaching materials. Performs working with text and graphics. To start the work authorization is required. In addition to personal materials, there is the possibility of using collections of works developed by other teachers;

10. **SpiderScribe** (<http://www.spiderscribe.net/>) – the online service for creation of mind maps. Unlike other services to create mind maps (Mind Maps), SpiderScribe provide for the creation of maps of various forms with existing elements such as text, images, files, calendar events and geographic locations;

11. **Mindomo** (<http://www.mindomo.com/>) – the service to create mind maps, allows the creation of colored maps, containing the photographs, drawings, audio, video and links. Basic Features: unlimited number of users simultaneously; changes are observed immediately by all users; comments and possibility of voting and appreciation of ideas and proposals; chat archive; e-mail notifications about changing the map; auto save, restore; online and offline synchronization.

The working principle of previously presented services consists in:

1. Authorization;
2. Selecting the form/template of requests interactive material;
3. Completing the template with the required information;
4. The publication of the developed material on the web or joining them in the lesson's project developed in specialized educational software for the interactive whiteboard.

Most of the proposed online services provide for the creation of teaching materials based on templates, which facilitates the work of the teacher, for example, reducing it to mere replacement of text with other or something similar. After creating the teaching materials, they can be added to the project created for interactive board in one of the specialized educational software designed for

working with interactive whiteboards.

Thus the development of interactive teaching materials becomes possible for people who have the minimal computer skills; the problem is reduced only to require the knowledge of online resources and minimal work habits on the Internet, using social networks.

The interactive materials created through online resources can be used, and without an interactive whiteboard in an electronic course on a learning platform like Moodle.

CONCLUSIONS

Using the interactive whiteboard in teaching, learning and evaluation has many advantages, but its implementation in an educational institution causes the problems in the design of lessons, accompanied by it. Some of these issues were mentioned in this study and are related to the elaboration of interactive teaching materials for the interactive whiteboard.

As shown in this study, some of the problems can be solved quite easily by using online services specially designed for elaboration of template-based interactive materials. Thus, any teacher can develop interactive learning materials for any field of study, by simply adaptation of existing models of teaching material for the needs of their own course, having the minimal skills of use of computer.

On the Internet there are many services of this type that accumulate experience in this domain of different teachers from around the world and we also have the opportunity to add our models in these world collections, sharing the ideas with other professionals from the whole world.

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