PILOT TRAINING ACCORDING SPECIALIZED METHODOLOGY WITH THE USE OF E-LEARNING

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Abstract: Training aircraft pilots of any type is from didactic point of view very demanding and responsible on content and systematic training of flight instructors who are supposed to train highly qualified in compliance with standard aviation regulations and standards. On electronic environment that should support this training, the specific requirements are needed. The article deals with the description of the methodology and implementation of an electronic educational system WBT.

Key words: WBT, e-Learning, LMS

1 Introduction

The role of previous phase of research methodology training of aviation specialists L410 UVP - E20 was to review the forms of the current pilot ground school, simulator training and pilot training on the aircraft itself. On this basis, we proposed pedagogical principles, methods and forms of training, implementation and evaluation of outcomes of the training course to be more effective on preparation of training plans in general for any type of aircraft [6,7]. At the level of scientific application, it is primarily the application of these methods to the chosen system of e-learning and consequently to educational content.

2 Specific objectives for the modernization of training [1,2]

- Upgrade the content and methods to improve learning outcomes for the needs of pilots.
- To focus the training of educators on the acquisition and development of competences of their educator needed to deal with modern and efficient training.
- Know and identify the general trend in leading pilot training.
- To manage an effective educational planning and processing of documentation.
- Manage people management and develop appropriate controls.
- Improve communication of educators in conducting training and instructional goals.

Educational curriculum

Curriculum answers the questions: who, why, what, how, when, under what conditions, with what expectations we will educate.

Measuring success trends in education is then carried out as follows:

- curriculum intended (in the curriculum)
- curriculum implemented (teached)
- curriculum obtained (learned).

Final measurements are processed and evaluated on the basis of interim and final test achievement of the required theoretical and practical results of educator [8,9].

Taxonomy

Taxonomy is the systematic classification and description in the context of the specific education and training area. To facilitate using active verbs the formulation of learning objectives. When using the taxonomy of the objectives we define the nature of the change

in education of trainee to be achieved by the end of the training. In education and training it is therefore necessary to define total and overall performance. The content of education and the need to undertake educator in training should be **formulated in educational standards**. This reflects the requirements for the output rate with respect to the necessary **key competences - competences** to be acquired by trainee on training course [3].
Educational standard is composed of two parts.

- content standard,
- performance standard

Content part educational standard specifies the minimum curriculum. Content part forms the curriculum, which is adoptable by trainees.

Performance part is the formulation of performance that determines at what level is the minimum curriculum trainee should know and know what to do.

3 Desired outcomes of the research methodology training of aviation specialists L410 UVP - E20

Behind partial training program we will further understand the real, comprehensive system of educational activities, with its own objectives and organizational forms.
Processing of the proposed study of complete pilot training as described process below, which develops the general and specific component profile of trainee. The study is in the content structure [4,5]:

- SWOT analysis and STEP analysis (analysis of environment and impacts)
- training vision
- strategy and strategic objectives of the training,
- design and implementation of quality indicators of PDCA cycle
- draft / outline training plans.

In the case of one-pilot aircrafts, training is intended mainly for enthusiasts of flying. For two-pilots aircrafts, as L410 is, pilots are trained - a specialist in occupational activity - work with this type of aircraft to its parent company at home or abroad (90-95% of participants of training).

Acquiring the type qualification in this case is associated with strong economic motivations of pilots.

On a specific level - the development of specific components of the pilot profile is subject trainees active:

1. get rid of their useless habits for the type training from other types of aircraft,
2. explain them in detail, what requires flying the aircraft L410,
3. teach to handle normal, abnormal and emergency, critical of flying,
4. help to ensure they receive a certificate of pilot-specialist for aircraft L410

4 Application of selected methods in the e-learning and implementation of educational content.

On the basis of the analysis were assessed some of the requirements that the system and materials should meet:

- multimedia,
- interactivity.
- responsiveness (possibility of functioning on different types of devices)
- multiple users with different rights (admin, teacher, course creator, student)
- hypertext / hypermedia,
- security,
- easy backup and restoring from a backup,
- easy operation for course participants, lecturers and administrator,
- easy adding content
- accessibility via the Internet,
- accessibility from portable media CD, DVD, USB flash drive.

5 Educational system WBT (Web Based Training)

WBT teaching software belongs to the latest trends in aviation training techniques. WBT courseware software is designed to study aircraft systems. Many detailed technical illustrations and animations, along with an explanation would lead the user through the course. Powerful and easy to use interface enables quick navigation while bonus features including interactive content, detailed diagram of the system, an examination modules enrich this dynamic learning tool [1].

Advantages of WBT courseware

- Customized solutions for the organization using solutions for specific aircraft training
- Available. Students can access their courses 24/7, from anywhere
- WBT courseware can be used as an aspect to enhance the effectiveness of teaching.
- Graphics easily renders complex and often complex aircraft systems and the smallest details.
- High efficiency. By allowing students to work at their own pace. WBT reduces the amount of time that students spend in the classroom while maintaining the highest retention rate of any other medium. WBT can be used as for the training group and for individual training.

WBT does not provide a total training solution, you always need to use a combination of lectures, WBT, practical training, field trips, etc.

WBT takes advantage of web technologies and applications, and content and application is usually stored on a remote computer (server) on the Internet. At WBT it is important that the devices on which the web application is operated are different - tablets, mobile phones, laptops, desktop computers.

WBT contains in addition to text documents, various simulation and visualization of the selected events. These significantly facilitate the understanding of the elusive and little notable phenomena and aircraft systems.

WBT leads to the fulfillment of specific objectives of the modernization of training, mastery of effective planning and process training documentation. The system facilitates communication and the common pilots and instructors with respect to important competencies that pilots must acquire and improve the educational process in training. WBT is enriched with presentations in which students can learn more about the functionality of various aircraft systems. There are visualized various systems and shown relations. The whole course is composed in English.

The WBT further contains supplemental learning materials such as short movies, service manuals and a booklet.

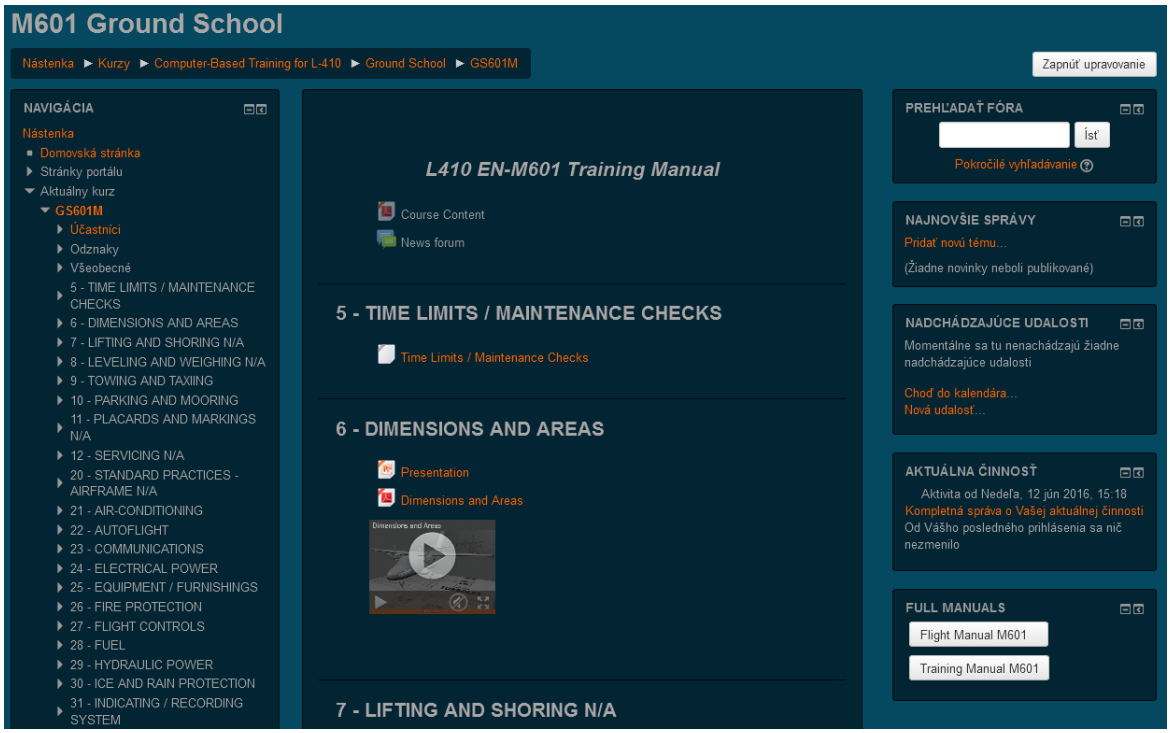

Fig.1: Course example

Another educational content can be added using external LCMS tools through compatibility with educational SCORM, AICC and IMS. Parts of the course, or even an entire course can be incorporated into other WBT systems, which makes it possible, for example, to sell part of the educational content to other educational institutions.

All users entering Moodle use a username and password assigned to them by the administrator. As in most systems, not every user has the same rights to work with the system. Everyone must be a member of a particular group, the latter being based on membership of this group will define its rights.

The system distinguishes the following user groups:

1. portal administrator - can do everything in the whole system,

2. manager - can do all in all courses.
3. course creators - can create classes and do everything only in those which they created,
4. teacher - can do everything only in their courses,
5. non-editing teacher - sees everything in their courses but can not edit
6. student - can study in courses where is registered,
7. guests - as an unauthenticated user can see some specified part.

The lecturer has the option to generate statistics of course and see what, how, when and where pilot studies.

Automated notification. System provides automatic notification concerning the availability and completion of the planned training. Notifications are sent via e-mail and / or via the messaging system of WBT.

WBT has implemented the so-called full support. of competence-based education (CBE). This approach allows students to proceed on the basis of their ability to master the skill or competence at their own pace, regardless of the surroundings. This method is suited to study different skills and may lead to more effective result of the study.

6 Conclusion

From the methodical point of view the review of the methodologies used so far and on the basis of the examination was proposed modification of existing methodologies and design of new methodologies of education and training of aviation specialists

At the level of scientific application, it was primarily about the application of these methods to the chosen system of e-learning and consequently to educational content.

WBT is based on LMS Moodle and allows complete control and management of electronic learning. This includes communication with students, reporting and statistics of the study of each student. The courses are divided into individual sections (weeks, chapters). You can add a variety of resources and activities. Resources are used for the presentation of learning content. It includes the ability to upload different files, web pages, URL links, videos, sounds, and so on. Activities are instead evaluated. They are in particular the various tests, surveys, questionnaires, Final thesis, forums and so on.

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