Optimizing e-learning platform for interactive training methods in nuclear domain

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Overview

This work presents the educational means provided by IFIN-HH for training to acquire knowledge and skills specific to research requirements, especially in the nuclear field. It is essential for trainees to be able to use the new education and training systems.

➤ Introduction

➤ Background and Objectives

➤ Selecting the e-Learning Platform

➤ Optimizing e-Learning Platform

➤ Conclusions

Introduction

Nuclear Training Center (CPSDN)

➢ has been developing post-secondary and post-graduate training for personnel involved in nuclear domain since 1970,

➢ has designed and implemented more and more training programs, constantly updated,

➢ mainly provides training programs for radiation protection and radiation safety for medical, industrial and research practices.

Background and objectives

➢ Development of modern nuclear training systems within IFIN-HH is a component of a complex strategy which involves a systematic integration of classical and modern methods

➢ Competitiveness and quality of training, both at national level and in European initiatives

All this through a process of modernization and use of new digital technologies in our activities

Selecting the e-Learning Platform

➤ Analysis of the weaknesses and strengths of the Coffee LMS and ILIAS e-learning platforms

Coffee LMS (Easy Class)

- an old version installed, specially parameterized to meet the CPSDN e-learning needs

- incompatibilities with the programs used to create e-learning courses

- statistics, graphs and reports on the evolution of the learning process can not be obtained

ILIAS

- Open Source software

- being created for general use, it has to be parameterized to meet the center's e-learning needs

- compatibility with Articulate software

- ability to obtain statistics, graphs and evolution reports

Selecting the e-Learning Platform

Coffee LMS

	Performance (grade) %	Total time	Accessed
	0	1m:25s	2018-04-18 14:03:39.0

ILIAS

Title ↑	∑ Access Number	Ø Time Spent / User	Ø Percentage / User	Status	Mark
test 18	9	27 Minutes 6 Seconds	25.00%	• ⬤: 3 (75%) • 🟡: 0 (0%) • 🟢: 1 (25%) • ❌: 0 (0%)	• None: 4 (100%)

Optimizing e-Learning Platform

Platform's administrator

➢ has the ability to configure the menus and permissions of each user

➢ set how to create new users and join them in a course to follow
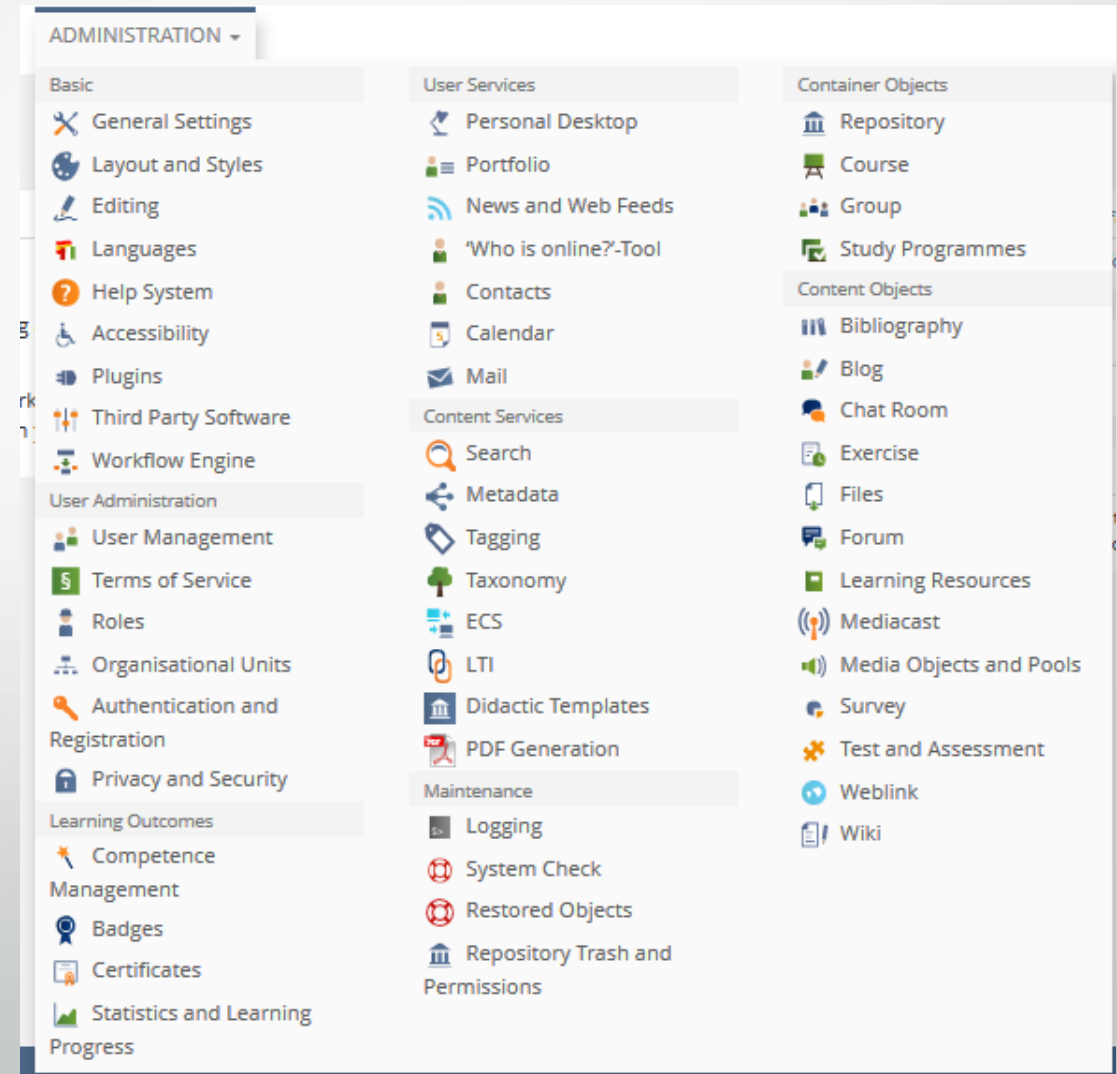
Optimizing e-Learning Platform

Trainer

➤ has the opportunity to create new courses directly in the platform

➤ or to load previously prepared material

Optimizing e-Learning Platform

Articulate Storyline 2 – a program for instructional designers, which provides an improved user interface and interactive learning elements

Optimizing e-Learning Platform

➢ Simple pages, with texts and images;

➢ Quizzes inside the course, with or without tracking the results;

➢ Interactive pages, created with triggers and separate layers.

Optimizing e-Learning Platform
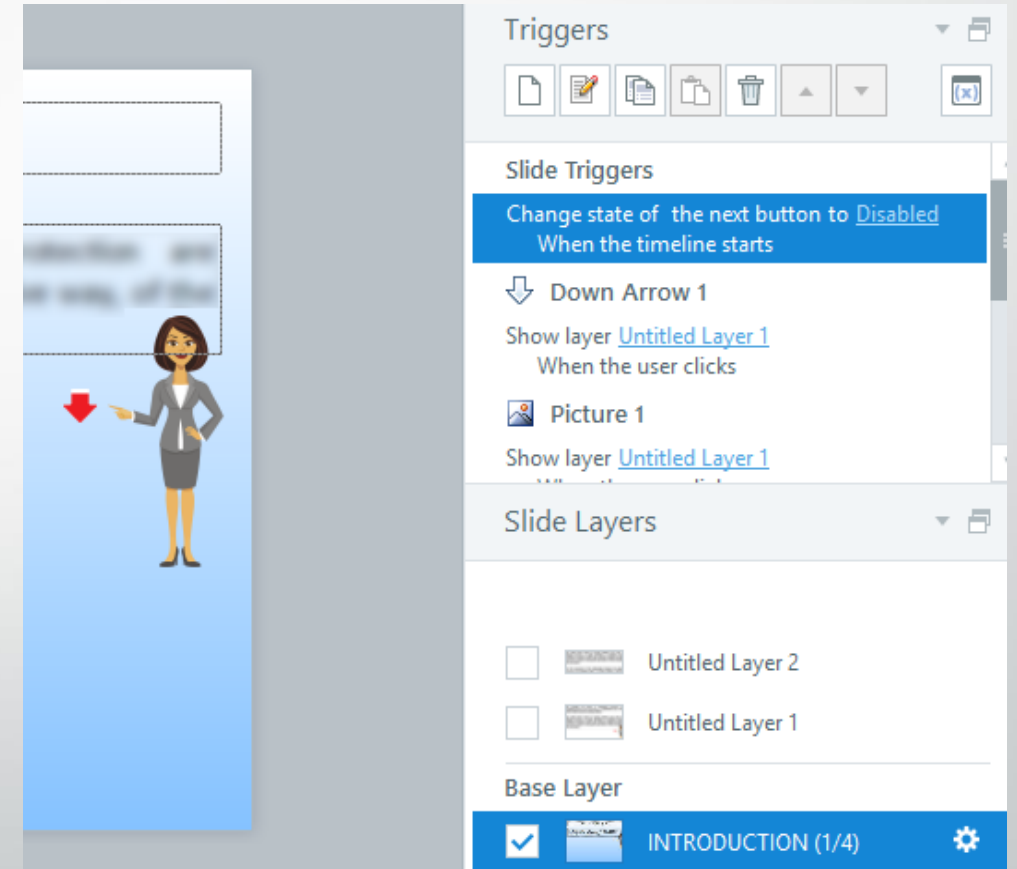
Optimizing e-Learning Platform

To create a test, ILIAS offers several possibilities:

➢ Fixed question test

➢ Quiz with randomly chosen questions from a pool of questions. This is a more advantageous method because the interfaces may vary from one trial to another and from one user to another. Thus, the test result will indeed show the knowledge gained from the course.

Optimizing e-Learning Platform

The test can be performed in one or more rounds, depending on what we are tracking. Also, the modification of the already selected answers can or can not be changed.

If a course is structured on multiple learning modules completed with an assessment test, such as the pyramid, accessing them can be conditioned by successfully passing the materials at the pyramid's basic levels to advance to the top of the pyramid.

Optimizing e-Learning Platform

When the course participant finalizes all the learning modules and passes the final test, a certificate that can be downloaded is generated.

The certificate is created based on a template that can be customized with various information.

[USER_LOGIN]: Login
[USER_FULLNAME]: Full name of the user (title, first name and last name)
[USER_FIRSTNAME]: First name of the user
[USER_LASTNAME]: Last name of the user
[USER_TITLE]: Title of the user
[USER_SALUTATION]: Salutation
[USER_BIRTHDAY]: Birthday of the user
[USER_INSTITUTION]: Institution of the user
[USER_DEPARTMENT]: Department of the user
[USER_STREET]: Street of the user's address
[USER_CITY]: City of the user's address
[USER_ZIPCODE]: ZIP code of the user's address
[USER_COUNTRY]: Country of the user's address
[USER_MATRICULATION]: Matriculation number of the user
[DATE]: Actual date
[DATETIME]: Actual date and time
[DATE_COMPLETED]: Date of completion
[DATETIME_COMPLETED]: Date and time of completion
[RESULT_PASSED]: 'passed' or 'failed', depending on the test results
[RESULT_POINTS]: Score of user
[RESULT_PERCENT]: Reached percentage of the user
[MAX_POINTS]: Maximum available points
[RESULT_MARK_SHORT]: Users mark (short version)
[RESULT_MARK_LONG]: Users mark (official version)
[TEST_TITLE]: Title of the test

Optimizing e-Learning Platform

Statistics are very important for the feedback of a

learning program

DETAILED EVALUATION FOR

Test Results in Points	60 of 60 (100.00 %)
Test Results in Marks	passed
Time of Work	00:04:35
Average Time of Work	00:01:31
First Visit	18. Sep 2018, 12:47
Last Visit	26. Sep 2018, 09:38
Number of Test Passes	12
Scored Pass	12
Mark of Median	passed
Rank of Participant	1
Rank of Median	1.5
Total Number of Participants	2
Median of Test Result in Points	30

AGGREGATED TEST RESULTS
(1 - 6 of 6)

Result	Value
Total number of participants who started the test	2
Total finished tests (Participants that used up all possible passes.)	1
Average test processing time	00:02:32
Total passed tests	1
Average points of passed tests	60.00 of 60.00
Average processing time of all passed tests	00:04:35

(1 - 6 of 6)

Conclusions

At this moment, CPSDN organizes more than 20 training programs each year for 400 - 500 participants from different institutions, including IFIN-HH. Each training program is dedicated to specific practices and domains.

It is difficult to organize training programs, especially for foreign participants, in our classrooms. So, e-learning is the best solution we've found so far.

A specific effort is needed to ensure a longer and lasting impact on digital content development (e-learning or blended e-learning) to make scientific knowledge available to people who want to update their knowledge, skills or just to refresh them.

Acknowledgements

This work was funded by the Ministry of Research and Innovation under the contracts no. PN18090302/2018 and H2020 ANNETTE - Grant Agreement no. 661910.

THANK YOU FOR YOUR ATTENTION!