Integrate Moodle with Drupal for digitalization of learning processes – end-to-end

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Use case: Example CIMMYT Academy

- Internal & external training participants
- Face-to-Face, Blended and Online-Trainings
- Attractive course catalogues for marketing of paid courses
- Course application process
- Decentralized course creation & course life cycle
- Reporting on training KPIs: Training records database
- Potentially other services such as alumni, conference organization etc. in the future
Benefits from going digital

**Internal Processes**
- Information
- Communication
- Collaboration
- Knowledge Sharing
- Workflows
- Automation

**Data & Big Data**
- Better knowledge on customer needs and markets
- Less estimation and “gut felling”

**New Channels**
- New platforms and channels to find and approach customers

**New Services**
- Experience
  - New Solutions
  - Just in Time
  - On your fingertips
End-To-End Digitalization of all learning and training processes

▶ Digital Processes for implementing the training program:
  ▶ What trainings are or should be delivered?
  ▶ Who must, should or could participate in which program (compliance, regulated industries)?
  ▶ avoid paper-based or unnecessary manual processes & steps (excel-lists)
  ▶ Automate what can be automated
  ▶ Also face-to-face trainings are fully managed digitally

▶ Data for controlling and steering the training program:
  ▶ How was the training program implemented and received last year? Auditability!
  ▶ What should we improve, optimize?
  ▶ What are the gaps in the training of or staff?
  ▶ Support for audit of organization’s training.

▶ New channels to make use of digital promotion of training program
  ▶ Advertise all trainings online (even face-to-face)
  ▶ Recommendations which trainings to take

▶ New services enabled through digitalization
  ▶ Availability of training materials – even for face-to-face
  ▶ E-Learning, Blended learning scenarios
  ▶ Performance support, recommendation of trainings
  ▶ Sharing of learning materials or course packages
Example for process map for learning & training (management) processes
Combine two best in class open source systems

Best in class e-learning tool
- Course authoring
  (Moodle tools, SCORM, H5P etc.)
- Course export, sharing etc.
- Course delivery
- Virtual Collaboration
- Communication

Best in class CMS / Web- and low-coding Framework
- Presentation
- Web-Site Structures, Intranet
- Workflows
- Process automation
- Reporting
- Administration

Powerful low-coding platform for digitalization of learning and training processes
Portal architecture

Academy Portal Structure
Virtual Learning Spaces

moodle-drupalservices
https://github.com/cannod/moodle-drupalservices
How do we practically leverage the combination of Drupal and Moodle
Promotion: Flexible Course-Catalogues

Filter and Find

Teaser: Course cards with the key information

Benefits:
- Promote courses internally and externally
- Allow users to find courses according to their interest
- Create a marketplace for courses
Promotion: Course information/application page

Apply for a course

Read about the course

Benefit
- Detailed and structured information about the course.
- Decide whether course is relevant.
- Receive key data like timing, hours etc. right from the start.
- Apply for the course, if interested.
Enter the course

If application was successful, students
• receive a notification,
• are enrolled automatically,
• and find the course on their course dashboard

They can now enter the Moodle-based course space.
Course creation through a custom form

e.g. every employee (or defined roles) can create a course, filling out a simple form.

Benefits:

- **Adapted course creation** form based on organizational standards
- **All required information** about the course is collected upfront.
- **All administrative adjustments are automatically done** based on provided information:
  - course template
  - language, date & time
  - Offering course sections and catalogues
  - Assign teachers and coordinators
  - Define application process

Once the trainers open the Moodle course space, everything is already setup as requested.
Course process: Course Life Cycle

Course go through different stages of a life cycle.

- automatized Stages
- Manual Stages

On every stage change, different actions are automatically triggered, e.g.
- Create course space
- Send notifications
- Enroll students
- Request feedback
- Close course
- Archive course (change permissions etc.)
Change and control course stage changes

- see and trigger allowed stage changes
- Auditable (history)
- Scheduled (e.g. to plan course announcement)
- fully automatic (e.g. based on course dates)
- control permissions to see and edit the course

Basis for further automation

e.g. on state change do ....
For international trainings, participants go through a 2-stage approval process.

- = automatized Stages
- = Manual Stages

After successful application, all students are automatically enrolled into the course.
Automated enrollment

Role
- Ensure Standard Operation Procedures
- Compliance
- Targeted capacity development

Department
- Initial training
- onboarding to company and department

Time
- Repeat trainings according to regulations
- e.g. Yearly
Training records for reporting

All relevant training data is consolidated in a training records database.

Three line reports are generated
- Course report
- Participation report
- Participants report

Preprocessed data to provide the basis for analyzing Key performance Indicators

(e.g. Gender, Topics, Hours, Passing-rate, Age-Group, Feedback etc.).
Technical Building Blocks
Moodle-DrupalServices/SSO

▶ Allows to integrate moodle and drupal and to provide a SSO-Experience
▶ https://github.com/cannod/moodle-drupalservices

▶ Setup is easy – just follow the rapid setup instructions:
▶ https://github.com/cannod/moodle-drupalservices/wiki/Rapid-Setup
Course representation on Drupal-Site with group

▶ URL: https://www.drupal.org/project/group
▶ Groups are Drupal entities that bring the relevant features for digital course spaces
▶ Arbitrary fields (e.g. course category, descriptions, learning outcomes)
▶ Members with roles and permissions (e.g. trainer, participant etc.)
▶ Bundle contents (e.g. application forms, downloads etc.)
Workflow configuration on Drupal-Site

► URL: https://www.drupal.org/project/workflow
► Allows to create arbitrary multi-step workflows
► **States**
  ▶ Define different workflow states (AKA stages)
► **Transitions**
  ▶ Define possible state changes (e.g. from draft to published)
► **Access**
  ▶ Define access rights depending on states
► Provides workflow history for tracking workflow changes
► Workflows are attached to an entities as a field.
Business rules module

▶ Rules: process triggered on events
  ▷ Archive courses, Create courses, Assign course membership

▶ Actions: Building blocks for rules
  ▷ set values, add members, send emails, create Moodle course, enroll into course etc.

▶ Conditions: If … than relations
  ▷ If course start date is today, if course was approved, if application was approved
Currently in the making
API-based Moodle and Drupal connection

▶ Current method: Control Moodle through automatic data imports (cron-jobs) etc.
▶ Next Level: Trigger actions in Moodle (e.g. create course) directly through webservices
▶ Extend business rules, allowing to define Moodle tasks as part of business rules, such as
   ▶ Create course with specific template
   ▶ Archive course (change permissions etc.)
   ▶ Create user
   ▶ Enroll user in course with specific role
   ▶ Block user
   ▶ Etc.
▶ This extension is currently tested and will be released as open source.
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