

Integrate Moodle with Drupal

for digitalization of learning processes – end-to-end

MoodleMoot, e-learning for Africa, Abidjan 20th October 2019

The Moodle logo, featuring a graduation cap icon above the word "moodle" in a bold, orange, lowercase sans-serif font.

+



Drupal™

=

?!



think
modular

Digital Solutions GmbH

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.

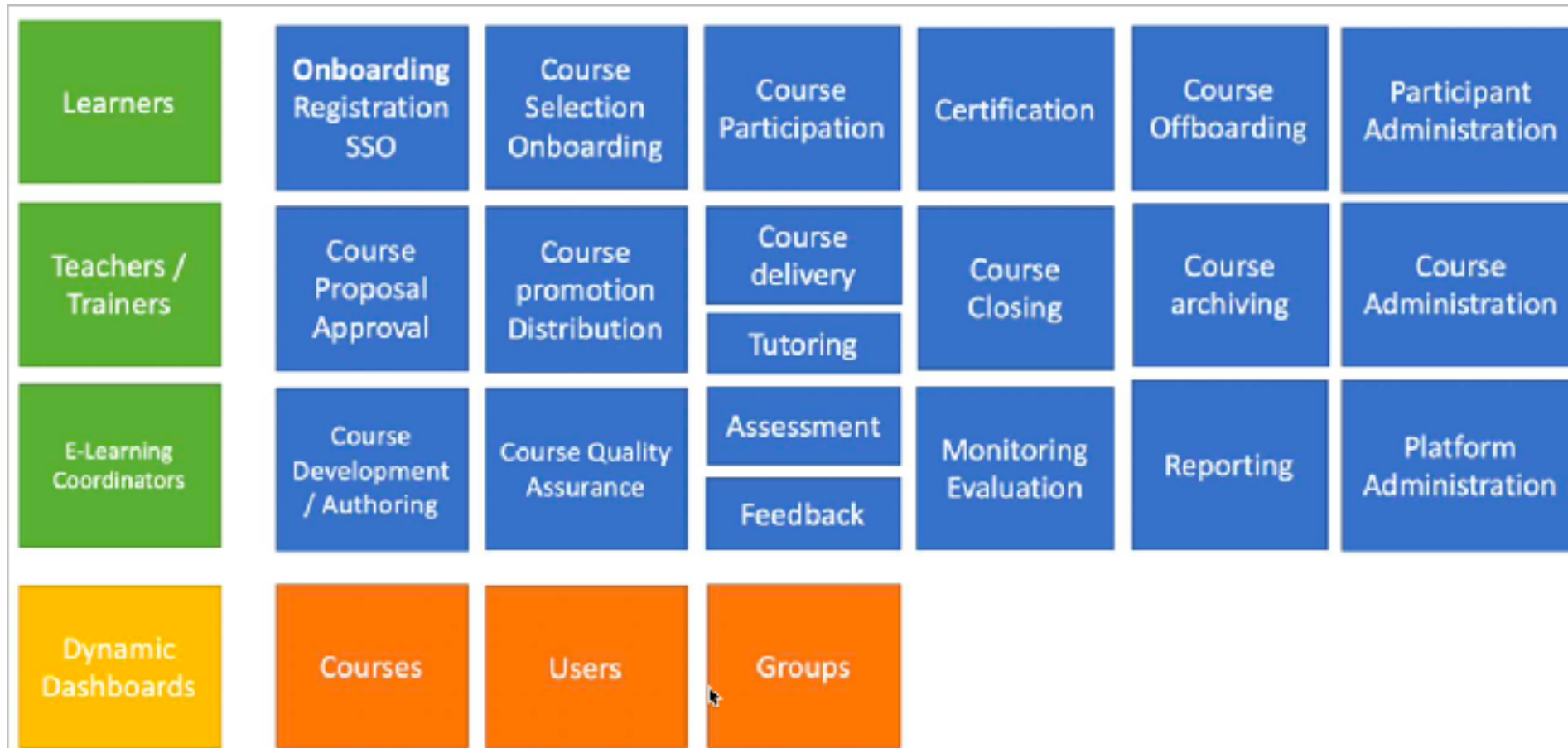
▶ New channels to make use of digital promotion of training program

- ▷ 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



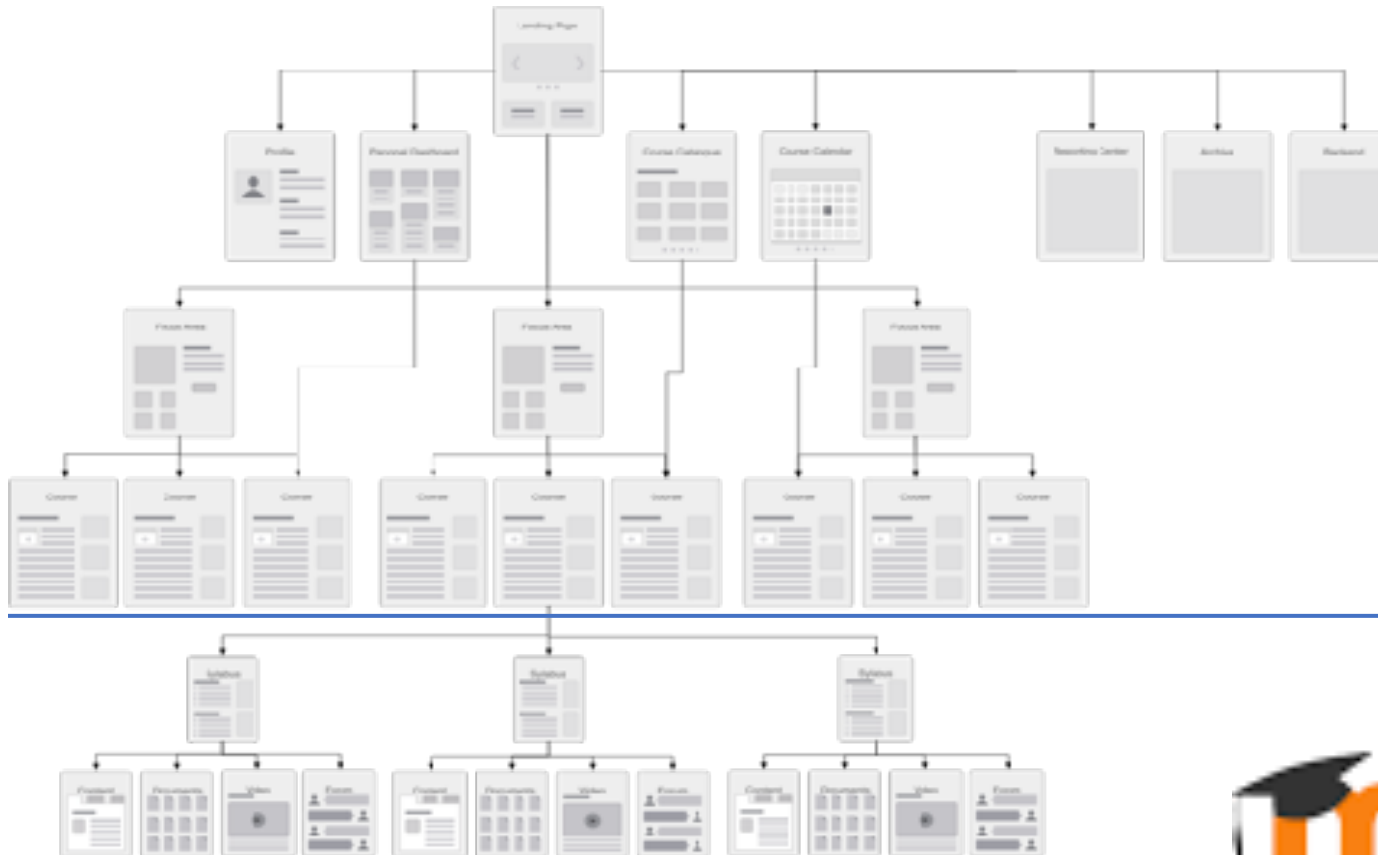
Best in class CMS / Web- and low-coding Framework

Presentation
Web-Site Structures, Intranet
Workflows
Process automation
Reporting
Administration



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

Portal architecture



Drupal™

Academy Portal Structure

Virtual Learning Spaces

SSO



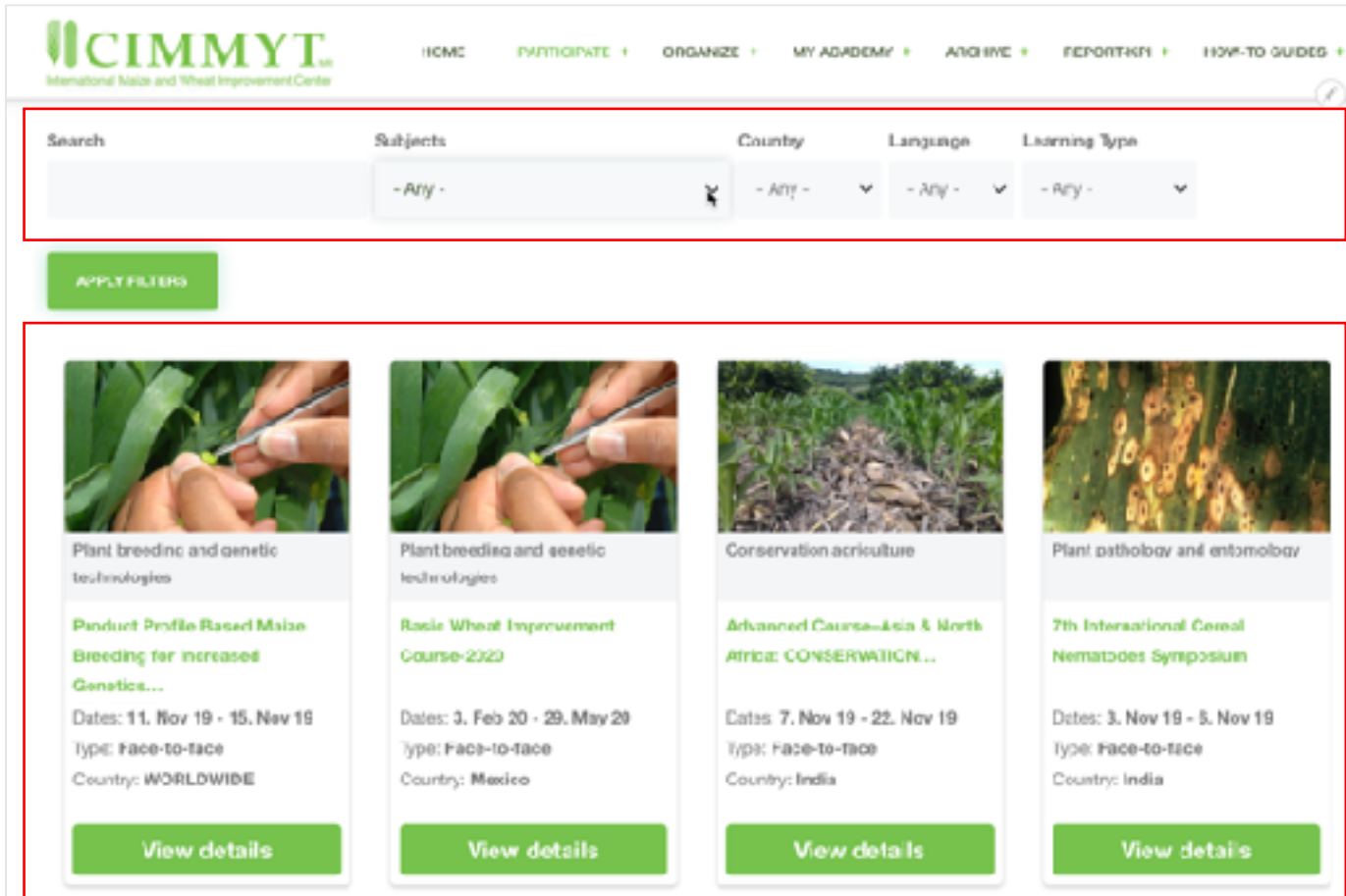
moodle-drupalservices

<https://github.com/cannod/moodle-drupalservices>



How do we practically leverage the combination of Drupal and Moodle

Promotion: Flexible Course-Catalogues



The screenshot shows the CIMMYT International Maize and Wheat Improvement Center website. The navigation bar includes links: HOME, PARTICIPATE, ORGANIZE, MY ACADEMY, ARCHIVE, REPORTING, and HOW-TO GUIDES. Below the navigation bar is a search and filter section with a search bar and dropdown menus for Subjects, Country, Language, and Learning Type. A green 'APPLY FILTERS' button is located below the filters. The main content area displays four course cards, each with a thumbnail image, a title, a subtitle, dates, type, country, and a 'View details' button.

Search	Subjects	Country	Language	Learning Type
	- Any -	- Any -	- Any -	- Any -

APPLY FILTERS

Course Card 1	Course Card 2	Course Card 3	Course Card 4
Plant breeding and genetic technologies	Plant breeding and genetic technologies	Conservation agriculture	Plant pathology and entomology
Product Profile Based Maize Breeding for increased Genetics...	Basic Wheat Improvement Course-2020	Advanced Course-Asia & North Africa: CONSERVATION...	7th International Cereal Nematodes Symposium
Dates: 11. Nov 19 - 15. Nov 19	Dates: 3. Feb 20 - 29. May 20	Dates: 7. Nov 19 - 22. Nov 19	Dates: 3. Nov 19 - 5. Nov 19
Type: Face-to-face	Type: Face-to-face	Type: Face-to-face	Type: Face-to-face
Country: WORLDWIDE	Country: Mexico	Country: India	Country: India
View details	View details	View details	View details

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



CIMMYT
International Maize and Wheat Improvement Center

HOME PARTICIPATE + MY ACADEMY +

Product Profile Based Maize Breeding for Increased Genetics Gains Lilongwe, Malawi

[Apply Now](#)

Description
The development of high yielding stress tolerant maize varieties suitable for the diverse agroecologies of subSaharan Africa (SSA) is major objective of public and private sectors in the region. To achieve this objective and drive increased genetic gains, efficient use of the limited resources is important. Recent developments in molecular applications, precision phenotyping and integration of doubled haploid technology will be critical in maintaining and improving genetic gains.

Objectives
To update the participants on the latest developments in practical maize breeding including development of product profiles, theoretical and practical applications of new methodologies in maize breeding and enhance the capacity of maize breeders to design and implement modern maize breeding programs using new tools and technologies.

Open for application until: Fri, 8. Nov.2019
Subject: **Plant breeding and genetic technologies**
Primary Target Group: **Scientists (NARS) - not exclusive!**
Fees: **US\$ 1200.00**
Number of trainings days: **5**
Learning Type: **Face-to-face**
Language: **English**
Event dates: **11.11.19 - 15.11.19**
Time requirements: **40 hours**
Country: **WORLDWIDE**
City: **Lilongwe**
Coordinator: **Makumbi, Dan (CIMMYT-Nairobi)**
Contact: **c.karanja@cgiar.org**

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.

[Go to Course](#)

Enter the course



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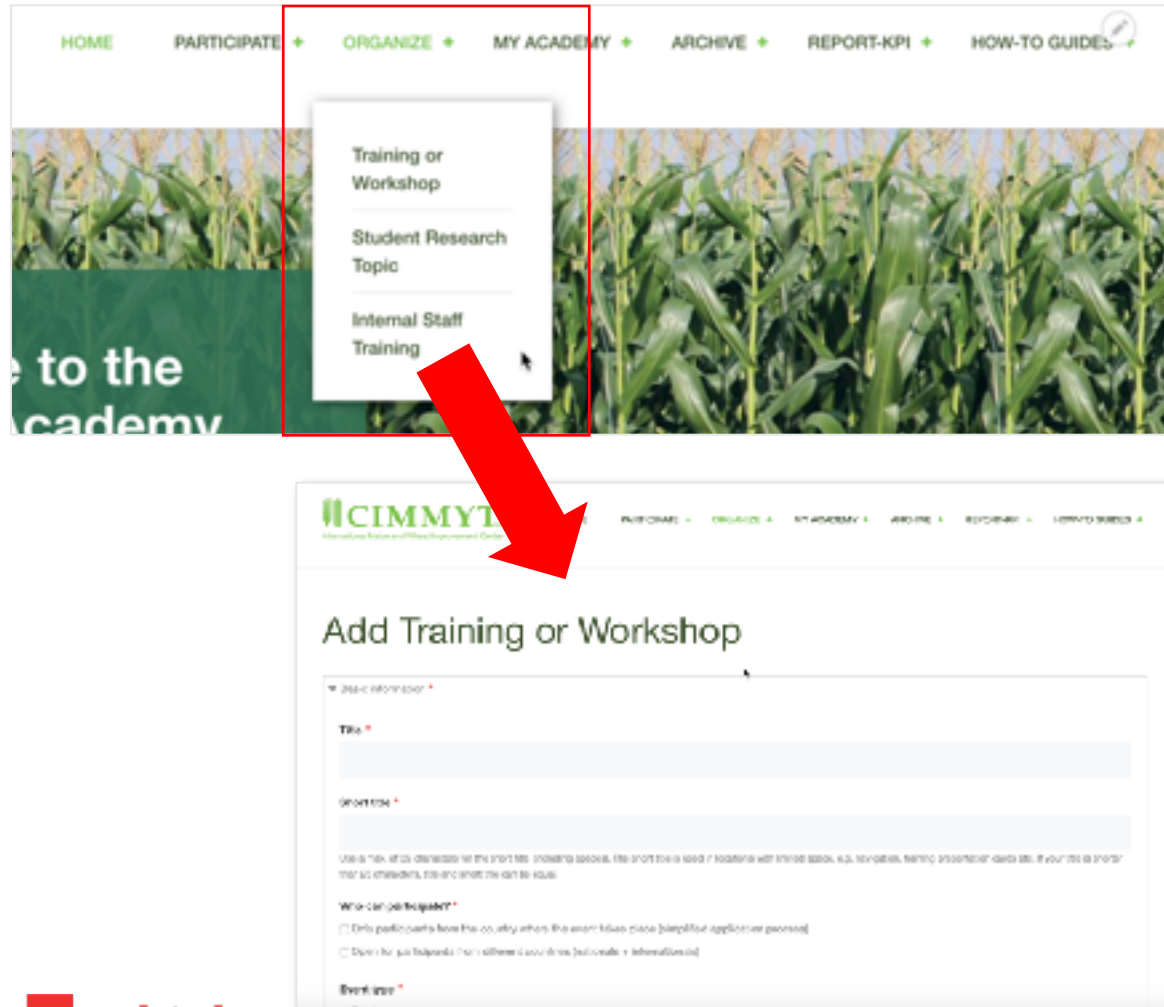
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If application was successful, students

- 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



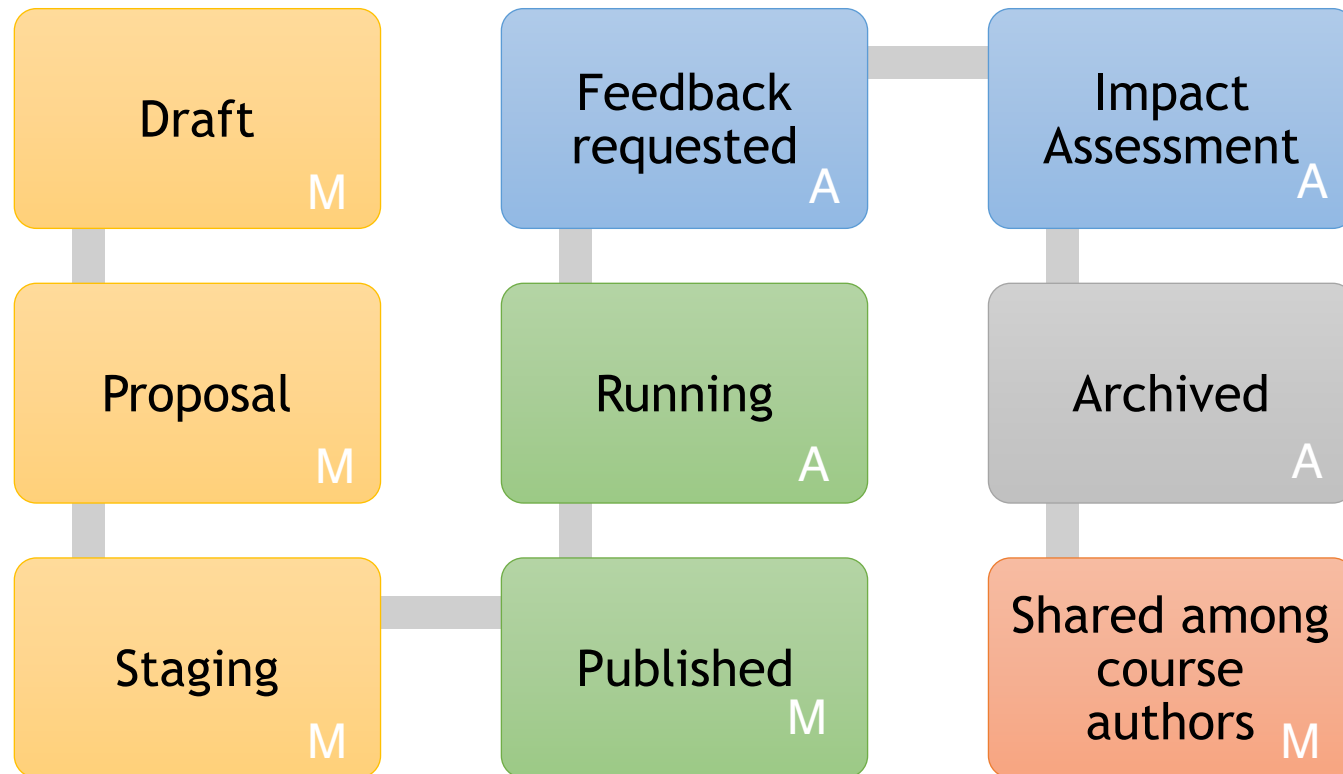
e.g. every employee (or defined roles) can create a course, filling out a simple form.

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.

Core 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

Change state

☐ Proposal
☐ Draft
☐ Unpublish event to preparation mode - Deshacer publicación de evento a modo preparación
☒ Save (published event) - Guardar (evento publicado)
☐ Running
☐ Feedback
☐ Feedback Requested
☐ Feedback Closed
☐ Assessment
☐ Assessment Requested
☐ Archive event - Archivar evento
☐ Shared Archive

Schedule

☒ Immediately
☐ Schedule for state change

Update workflow

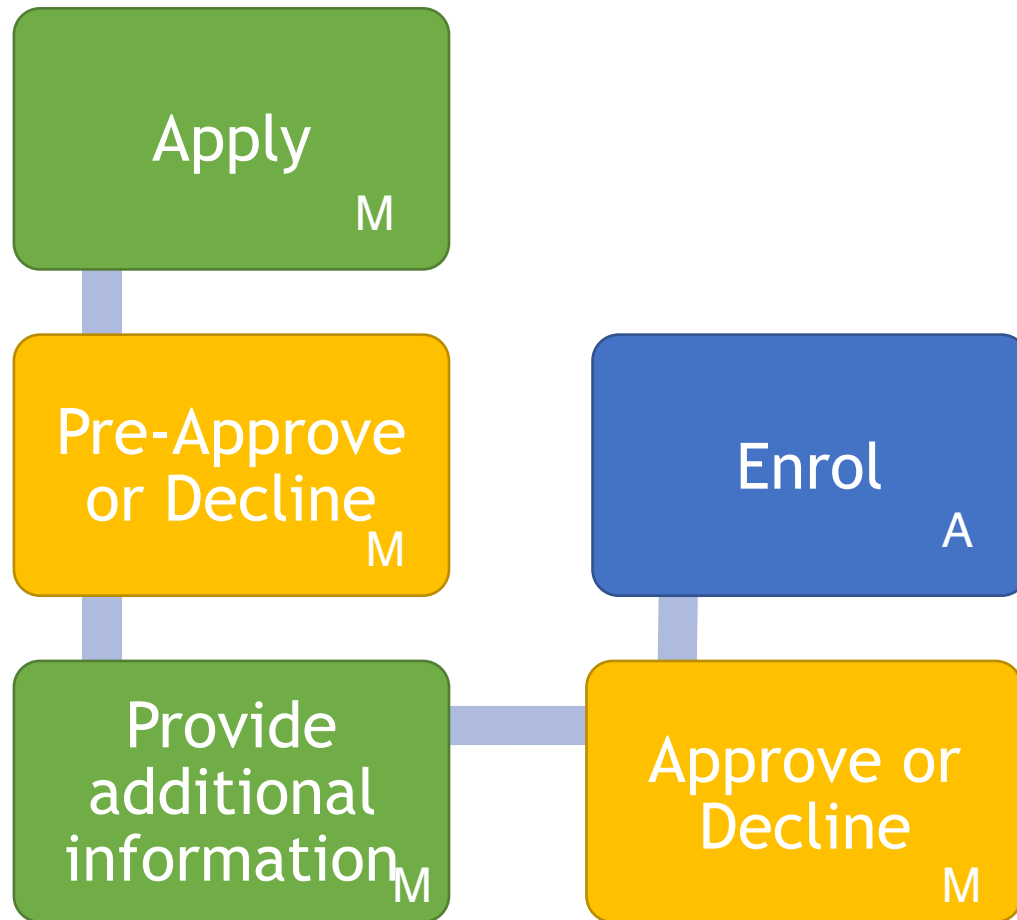
Timestamp	From state	To state
Fri, 10/04/2019 - 15:21	Proposal	Announced
Tue, 10/01/2019 - 08:37	Creation	Proposal

- 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 ...

2 Step Application processes



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



The screenshot shows a web-based interface for a training records database. It features a table with multiple columns, including 'Course', 'Participant', 'Hours', 'Passing-rate', and 'Age-Group'. The table is populated with data, and the interface includes search filters and navigation controls.

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

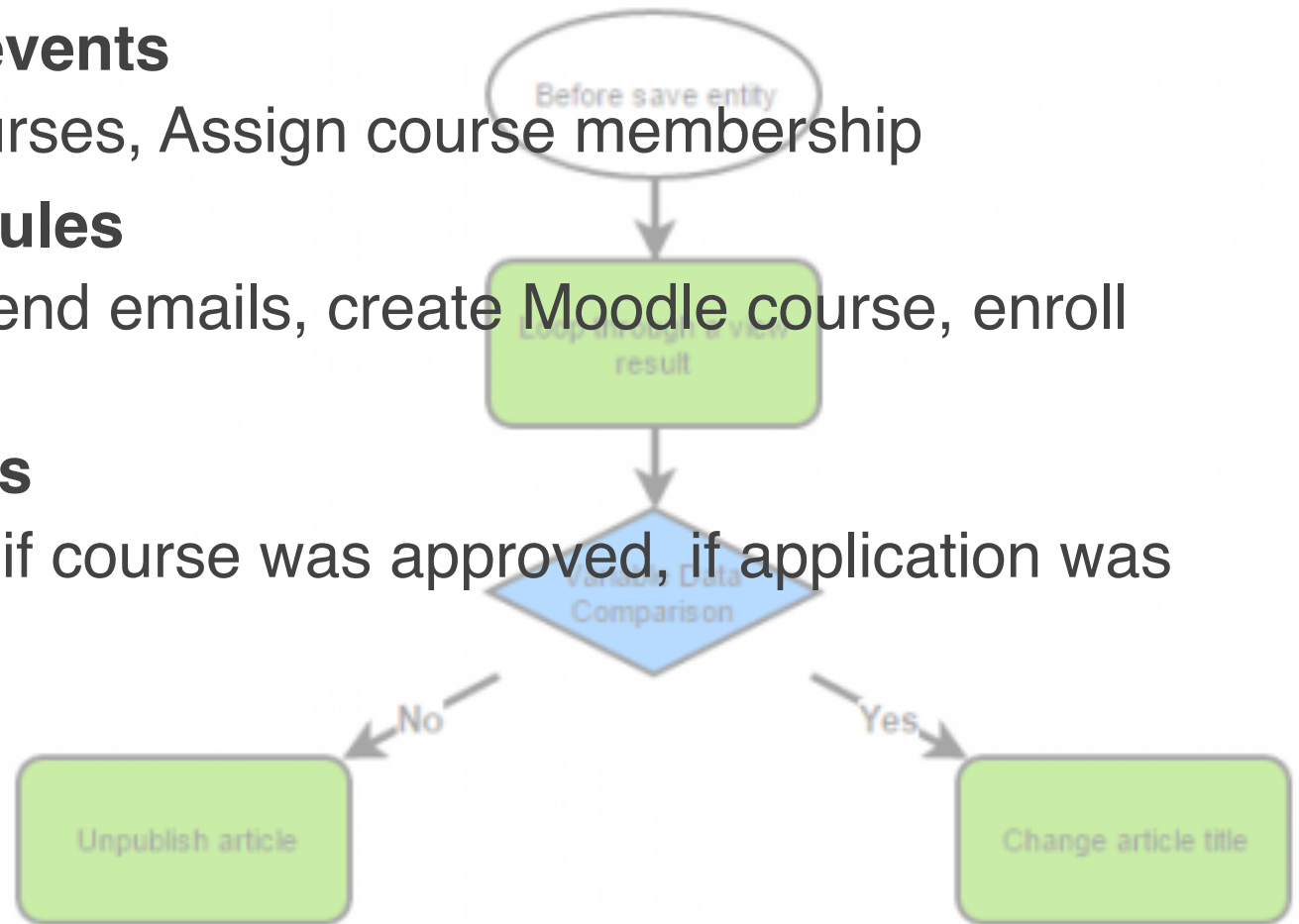
- ▷ Archive courses, Create courses, Assign course membership

► Actions: Building blocks for rules

- ▷ set values, add members, send emails, create Moodle course, enroll into course etc.

► Conditions: If ... then 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 webservice
- ▶ 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.

About think modular – digital solutions

Full service provider for digital digital learning & training solutions



goal-oriented

Strategy & solution
consulting



inspiring:

Training & coaching



customized:

Concept &
implementation



Secure:

Cloud services &
application hosting