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Building an Effective eLearning Experience with Drupal

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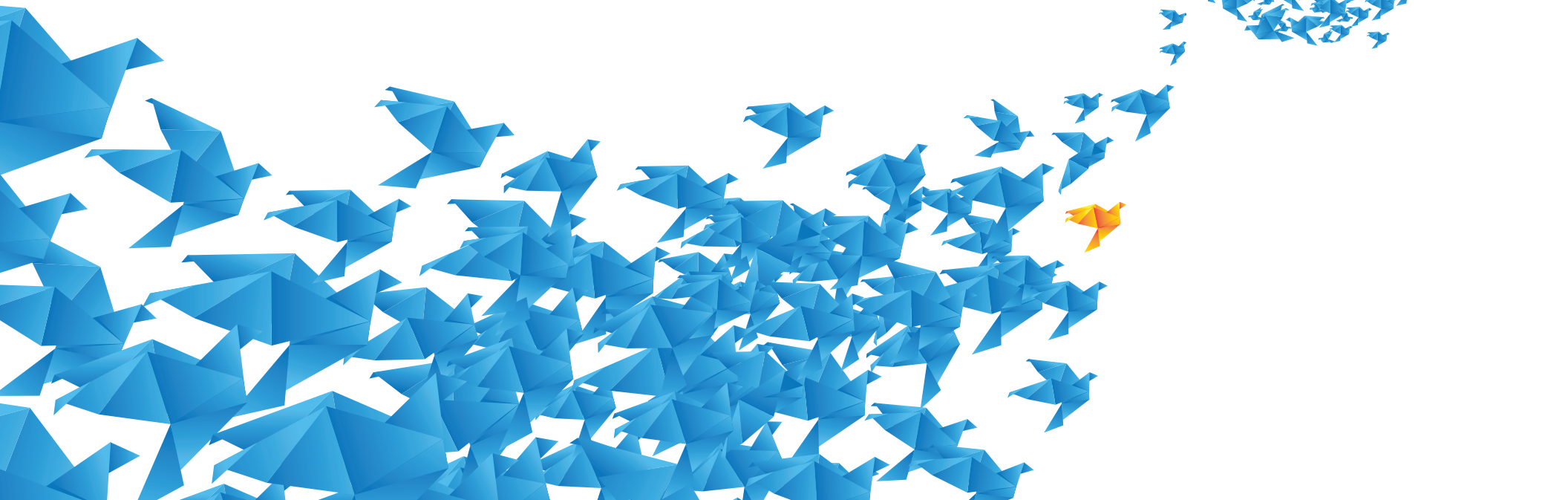

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Introduction

Effective eLearning and knowledge management solutions are an essential element of success for most organizations, whether they are learning institutions, government agencies, or commercial enterprises. This eBook explains how Drupal 7 is a natural platform for creating sophisticated eLearning systems.

People come to education with assumptions about conveying and receiving information. When someone stands in front of a class to convey information, we already understand the relationship between the person speaking and the people listening. Creators of eLearning communities, using any platform, face the challenge of building around these assumptions.

Teaching can be difficult, with a lot of information to convey, whether learning systems target limited or large subject areas. On the other hand, learning is easy. Each individual has available at all times multiple intelligences, using Howard Gardner's learning styles model. Effective eLearning methodologies must take into account how people learn, not just content and skills. Drupal provides an excellent solution to meeting the requirements of all types of learning.

Many of the challenges in creating eLearning systems can become opportunities if handled correctly:

Challenges	Become Opportunities
Track attendance	Authenticate students
Create student/teacher relationships	Conduct individualized instruction
Facilitate classroom management	Provide relevant and current materials
Conduct guided and group discussions	Create virtual classrooms
Manage group dynamics	Support vigor, authenticity
Manage interruptions	Analyze real-time engagement

A well-planned eLearning system will address these issues in a strong and effective way, flexible to meet the unique needs of clients and participants. This eBook will cover best practices for implementing your own eLearning solution using the Drupal 7 platform.

HOWARD GARDNER - 1983

blink reaction

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Project Management Best Practices

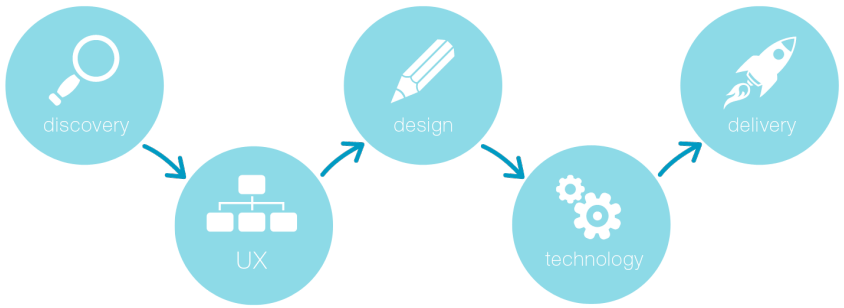
eLearning systems have unique requirements different from e-commerce or informational sites. To achieve best outcomes for an eLearning project, use the following project management best practices.

Timeframes

Begin by determining your client's eLearning website requirements, approached through three different timeframes:

- On the day of launch
- Six months after launch
- Eighteen months after launch

Considering these extended timeframes adds an essential dimension to planning for eLearning. With an eLearning system, student users will be interacting with the site for an extended period, both to gain information over numerous site visits, and to test skill sets. Determine scope taking all these factors into consideration, then break it into small pieces and phases.



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Client Needs

Know your clients' needs and structure the project around them. Some clients will need to start with a minimally viable product, then monetize it to get some early returns. Some will want to test the product and concept to be sure it is doing what they want before investing heavily in it.

Responsibility Matrix

If the project is complicated with multiple stakeholders, spend time creating an accurate responsibility assignment matrix, or RASCI. You will then know who to keep informed and who to consult with different decisions. Without this, your project can lose momentum if an important stakeholder or group is not included from the beginning.

Agile Development

Follow an agile development process with frequent iterations and consultation with clients. Keep your clients involved with the progress of the project and engage them with help in testing.

What is Agile

The Agile methodology is an evolution in the software development process that has enabled software teams to move from the conventional waterfall model to something that was much more dynamic. It eliminated the "waiting" that teams experienced in the waterfall model to allow various moving pieces to interact while one phase was going on. Collaborative efforts, successful planning and execution, and flexibility to tackle projects and changes head on are all promoted through this approach.

Inspired from "lean" manufacturing concepts, Agile takes into account the unpredictability and dynamic nature of software development and embraces it. Featured Agile processes include: Scrum, Extreme Programming (XP), and Kanban.

Being Agile in today's market and throughout the development process will make various tasks and functions run smoother and more efficient, delivering a better quality end product.

The Learning Environment

The design of the learning environment is crucial to the success of the eLearning platform.

Recreate the Classroom

One important goal is to recreate the look and feel of the classroom. Drupal 7 provides several approaches to this task. Use the Organic Groups module to create distinct cohorts of users. Other contributed modules such as Context and core modules such as Taxonomy can be used to build out entire structures in your website that recreate and improve on the traditional classroom model.

Dashboard

Immediately set up a personalized dashboard for students. Brick and mortar students have various paper schedules to keep track of their classes, and online students need the same. If well designed, this function actually works much better online.

Organize Content

Correctly classifying information is a very early premise in education and library sciences. Drupal's core Taxonomy functionality provides an excellent basis for creating online classification systems. To give your eLearning system a strong foundation, develop a smart nested taxonomy structure that is very clear to the end-user. Drupal will punish you if you don't put enough time into understanding and organizing your content.

Individualize Content

Drupal is well suited to preventing the tendency of providing a one size fits all experience, which happens even in modern eLearning programs. Taxonomy and its tags are one way to allow students to customize their learning experience through Drupal. One of Drupal's strengths is presenting different bits of information to different users based on permissions, roles, and other identifiers.

Differentiate Instruction Sets

Drupal is particularly well suited to segmenting learners into sets of profiles and assigning configurable curriculums based on those profiles. Start with an understanding of your content and your achievement goals for your students, then include the level of content understanding and skill sets they demonstrate online. You can use Drupal to group students into authentic, discrete classes or cohorts to their benefit and to the benefit of classroom management.

Learning Styles

A successful platform will render information to students in a creative fashion that meets as many different learning intelligences as possible.

Multiple Presentation Versions

Present information in multiple formats simultaneously to tap into different learning styles. In one tested example, a presentation connects the script of a video to the video itself, so that students can read the material as the video streams onto the screen. In testings, this format had a tremendous impact on retention. The approach addresses students who need something to hold their attention visually through video but also students that benefit from the reinforcement of reading.

Color

Color works well to engage visual learning. Use color to impart visual hints, such as green for correct answers and red for incorrect, to achieve a quick way of maintaining engagement.

Mobile Devices

Mobile devices provide even more ways to tap different learning styles. You can create something as simple as a traditional scavenger hunt to something more akin to an online GPS gaming experience. Responsive themes in Drupal eliminate the need to have multiple websites for mobile devices.

Blended Scenarios

Some groups need solutions for blended scenarios, such as using an eLearning platform in a physical classroom setting. This type of setup allows users to function in both worlds very comfortably and supports educators between school and home or work and home transitions. Drupal's ability to support bi-directional data sharing makes it a very strong platform from which to deploy Internet services across multiple channels in blended settings.

Surveys, Assessments, and Authentication

An important part of eLearning systems is assessing skill and understanding achievement levels.

Surveys and Assessments

The preferred tool in Drupal 7 for surveys is the Webform module. Webform can be custom configured and extended as an outstanding tool for delivering lessons and measuring attainment. Many additional contributed modules extend the Webform module, and it can easily be customized to achieve the exact functionality needed.

The Challenge of Authentication

A key challenge in eLearning is authentication, the question of who is actually spending time on the class site and taking the assessments. Several different methods attempt to gauge attendance and engagement, but most can be tricked by a student leaving a page open in the browser. Sophisticated systems employ various types of digital signatures that identify patterns of usage so that it becomes apparent when someone else logs into a system on behalf of the original user.

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Drupal 7 Benefits

Customization

Although you have access to thousands of contributed modules through drupal.org, there is no guarantee that they will do exactly what you need. With open-source code, you can find a module that is close and customize it for your exact needs. If you build many eLearning systems, you can create standard sets of code and extend them to meet particular client use cases.

Extensibility

Drupal integrates very well with other systems and standards. In many systems, it is an important variable in a whole solution rather than the solution itself. In some enterprise systems, Drupal may be only 10% of the equation, but a key 10%. Part of using Drupal effectively is knowing how and when to extend it with other smart third-party implementations.

Standards Compliance

Drupal respects standards compliance and can be configured to use eLearning standards such as SCORM and the Tin Can API. Compliant solutions can be built through customizing Drupal or through integration with third-party services. When dealing with any set of standards, such as medical privacy standards, any compliant third-party technology with an open API can be integrated with Drupal.

Drupal 7 Resources

Organic Groups (https://drupal.org/project/og)
Context (https://drupal.org/project/context)
Taxonomy (Drupal core)

→ Organize classrooms, classes, and courses

→ Invite students

→ Associate related discussions

→ Provide instructor curated content and materials

Fields, Entities, Taxonomy (Drupal core)
Solr Search (https://drupal.org/project/apachesolr)

→ Create structure

→ Facilitate search and research

Webform (https://drupal.org/project/webform)
Quiz (https://drupal.org/project/quiz)

→ Assess comprehension or survey

→ Compile results and data

Comments, Forums, Polls (Drupal core)

→ Provide interactivity

Views (https://drupal.org/project/views)
Taxonomy tagging (Drupal core)

→ Reuse and repurpose content

→ Individualize content

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