

Work Package 4

Design of STEPS LMS Platform



Outline

- *General requirements*
- *Functional requirements*
- *Non-functional requirements*
- *Content design and development*

General requirements

- The main objective is to host educational material of STEPS Master program
- TARGET GROUPS
 - Learners and STEPS Staff team
- Based on open source software and on user-centric philosophy
 - Update to newest release, open edX distribution
 - Adjust to MOOC world of online and self-paced learning
 - [Creative Commons Attribution-NonCommercial 4.0 International License](#)

General requirements

- STEPS branding – graphical elements and information related to STEPS project
- **Landing page** offering available courses or training material
- **About course** page
 - Acts as an advertisement of the STEPS program
- Additional content including legal aspects
 - Terms of Service, Privacy policy, Honor code, link to social media
- Self-paced learning
 - The user can choose when to complete learning activities
- Important – we need translated content

Functional requirements - Architecture

- Based on the Open edX platform
 - <https://github.com/edx/edx-platform>
- Consists of two web apps
 - Learning Management System (LMS) – learner view, front-end application
 - Studio – Authoring & configuration tool used for uploading content, design grading policy, implement different assessment types, etc

Functional requirements - LMS

- Self registration and login - automated process
 - Platform manager for manual processes
 - user can register or unregister
- Downloadable material
- Progress Dashboard
 - The learner can check real-time where (s)he stands

Functional requirements - Studio

- Calendar based scheduling – some assignments may have time boundaries
- Essay assessments
 - Machine or peer grading
- Activation of ancillary services including:
 - Wiki & handouts page – create custom pages if needed
 - Learner-centric analytics - needs 3rd party integration apps for greater efficiency like *Insights* or *Figures*
- User management – different roles
 - Admin – manage Staff, Admins, Beta testers, other supported roles
 - Staff – manage enrollments, user grades, reset user attempts, etc
 - Discussion moderator – edit/remove inappropriate content, replying to questions

Functional requirements - Studio

- Directly upload video lectures to streaming server (i.e. youtube)
- Define grading policy and weights on different types of assignment
- Edit course description page
- Quiz/problems editor
- Import or export a course/training material
- Preview the course
- Notifications/updates interface

Non-Functional requirements

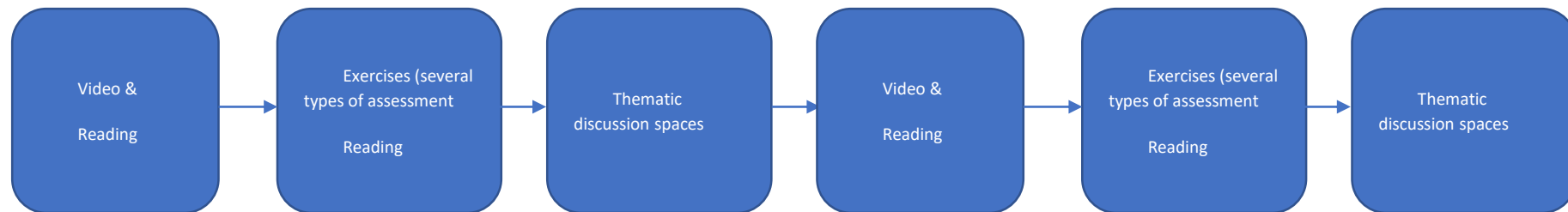
- Linked to google analytics
- Compliance with Web Content Accessibility Guidelines (WCAG)
- Security – confirmation email
- Performance – Operations including opening, sorting, computing, posting of 90% of files should be performed in less than 2 seconds
- Availability – in case of errors/bugs, always display appropriate error messages in all browsers and OS; be able to recover from exceptional conditions

Content Design and development

- Modularity
 - Instead of hour-long lectures, it will contain bite-sized components including short-video lectures, individual exercises, reading material
 - Alternate teaching material with assessment material
- Organized in small pieces of learning
 - Section -> typically represents a weekly time period a.k.a Modules or Weeks
 - Subsection -> represents a topic or other organized principle, a.k.a. Lesson or learning sequence
 - Unit -> single page views containing one or more components, i.e. videos, reading materials, problems & quizzes, discussion spaces, etc

Content Design and development

- Learning Sequence structure



- Short videos of 3 to 8 minutes and as modular/standalone as possible
- After each learning sequence, a “local” discussion topic can be integrated
 - Also accessible through the course discussion forum

Content Design and development

- HTML components
 - Text, links, images, etc
- Video components
 - Should be kept as short as possible
 - Accompanied by subtitles (usually in .srt format). The platform media player displays captions in an interactive sidebar that benefit hard of hearing learners or whose native language differs from the natural language spoken. Enhances course's accessibility

- Video specs

Output	Publish to YouTube	Publish downloadable file to AWS S3
Codec	H.264 .mp4	H.264 .mp4
Resolution & Frame Rate (see note)	1920x1080, progressive, 29.97 fps	1280x720, progressive, 29.97 fps
Aspect	1.0	1.0
Bit Rate	VBR, 2 pass	VBR, 2 pass
Target VBR	5 mbps	1 mbps
Max VBR	7.5 mbps	1.5 mbps
Audio	AAC 44.1 / 192 kbps	AAC 44.1 / 192 kbps

Thank you!

Any Questions?

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