PR2 A1

FUNCTIONAL AN TECNICAL DESIGN DESCRIPTION

360 REWIN

1. Project Overview

The PR2: 360 REWIN e-Learning Platform is an initiative designed to enhance the educational capabilities of lecturers, psychologists, and social workers who aid immigrant women affected by gender violence. This project leverages digital tools to develop and deliver comprehensive training programs that improve the participants' competencies in identifying and responding to the specific needs of this vulnerable group.

The specific focus of the R2.A1 section involves the detailed planning and design of both the functional and technical aspects of the e-learning platform, ensuring that it effectively addresses the educational goals and supports the integration of multilingual content.

This document serves as a fundamental component of the project documentation suite, detailing the functional and technical design specifications for the e-learning platform. It outlines the intended structure, content, methodologies, and technical frameworks that will be employed to achieve the project's educational objectives.

2. Roles and Responsibilities

BJALAND: As the technical manager of the PR2: 360 REWIN e-Learning Platform, BJALAND is responsible for overseeing the overall technical direction and integrity of the project. This includes leading the task of functional and technical design, ensuring that all technical specifications meet the project's requirements and guiding all partners through the implementation process. BJALAND will provide ongoing support and expertise in system architecture, security measures, and the integration of new technologies, ensuring that the platform is robust, scalable, and secure.

COPCyL: The Colegio Oficial de Psicología de Castilla y León (COPCyL) plays a pivotal role in the course design for the e-learning platform, focusing specifically on content development for psychologists, health science professionals, and social workers. Their responsibilities include the creation of educational materials that are relevant, evidence-based, and tailored

to effectively address the complexities of supporting immigrant women who have experienced gender violence. COPCyL will collaborate closely with academic experts and practitioners to ensure the content is pedagogically sound and meets the learning objectives.

P LEIRIA and UBU: The Instituto Politécnico de Leiria (P LEIRIA) and Universidad de Burgos (UBU) are tasked with supporting the content creation from an academic perspective. Their role involves ensuring the educational content is rigorously assessed for quality and effectiveness, providing critical feedback, and helping to refine the course designs to better meet learner needs. Both institutions will leverage their expertise in higher education to enhance the instructional design, integrating innovative teaching methodologies that are proven to be effective in diverse educational settings. The Instituto Politécnico de Leiria (P LEIRIA) and Universidad de Burgos (UBU) also contribute to the translation processes, ensuring that the content is accurately translated into Portuguese and English to support a broader range of learners.

Euroform RFS: It will also participate in the translation processes, ensuring that translations are accurate and culturally relevant for Italian-speaking users.

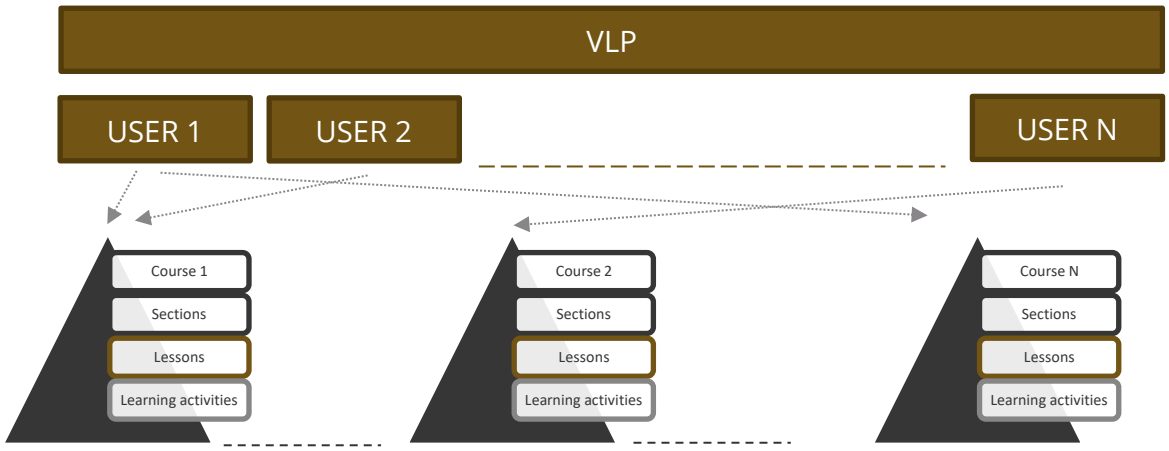
3. Course Design and Content Development

Overview

The course design and content development for the PR2: 360 REWIN e-Learning Platform are central to achieving the project's goals of enhancing the skills of professionals who support immigrant women affected by gender violence. This section outlines the specific approaches and methodologies used to develop courses for three primary audiences: lecturers, psychologists and health or social workers, and university students.

At this part the platform was designed and developed. BJÄLAND, as technical manager, has lead this task and support and guide all partners.

The VLP was created following the next pyramidal structure:



- COURSE includes significant information about the main aspects of the course: dates (start and end), limited duration, data from students, tutors, facilitators, keywords, SEO aspects.

- SECTIONS and LESSONS contain the information, activities and ways of learning the knowledge that we are developing. Platform's content management capabilities allow any course configuration with the corresponding number of lessons and sections.

A course consists of a certain number of lessons. A lesson is a full page of content. Lessons can be grouped in order to have an intermediate structure of content that would be the sections. Each content page is created with independent text, image and activity modules.

VLP Roles

It exists different roles for every user:

- Administrator

- Tutor

- Participant

VLP Technical Details

Content Management System

The used content management system (CMS) for this VLP is Wordpress. WordPress is free, open source publishing software that can be installed locally on a web server and viewed on a proprietary web site or hosted in the cloud and viewed on the WordPress web site.

Data base

The WordPress database is a MySQL database that stores your website's data into tables, rows and columns. The WordPress database is dynamic, which means you can add, modify and delete information contained within it.

Code Language

Moreover, to create the contents and visualizations for the VLP it is used:

- PHP: is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

- JAVASCRIPT using jQuery framework. JavaScript is a scripting or programming language that allows you to implement complex features on web pages. jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers.

- HTML: It is a standard markup language for web page creation. It allows the creation and structure of sections, paragraphs, and links using HTML elements (the building blocks of a web page) such as tags and attributes.

- CSS CODE: is the code that styles web content.

Under the framework of Wordpress and using the mentioned language program systems it is developed the VLP.

Plugins

After that, in order to incorporate the requirements and functionalities which are necessary for creating the course it is used several plugins. There are two types of them:

- General plugins: Plugins previously created for any user of Wordpress that are installed (cookies, legal aspects…)

- Specialized plugins: Plugins made to custom development for every course.

These specialized plugins are the main differential character of a VLP. Some of the plugins developed are:

- Learning activities: quiz test, matching images and sentences, crosswords, ranking levels, true or false.

- Statistic tools: time used in every lesson, number of log in, time dedicated to realise the activities.

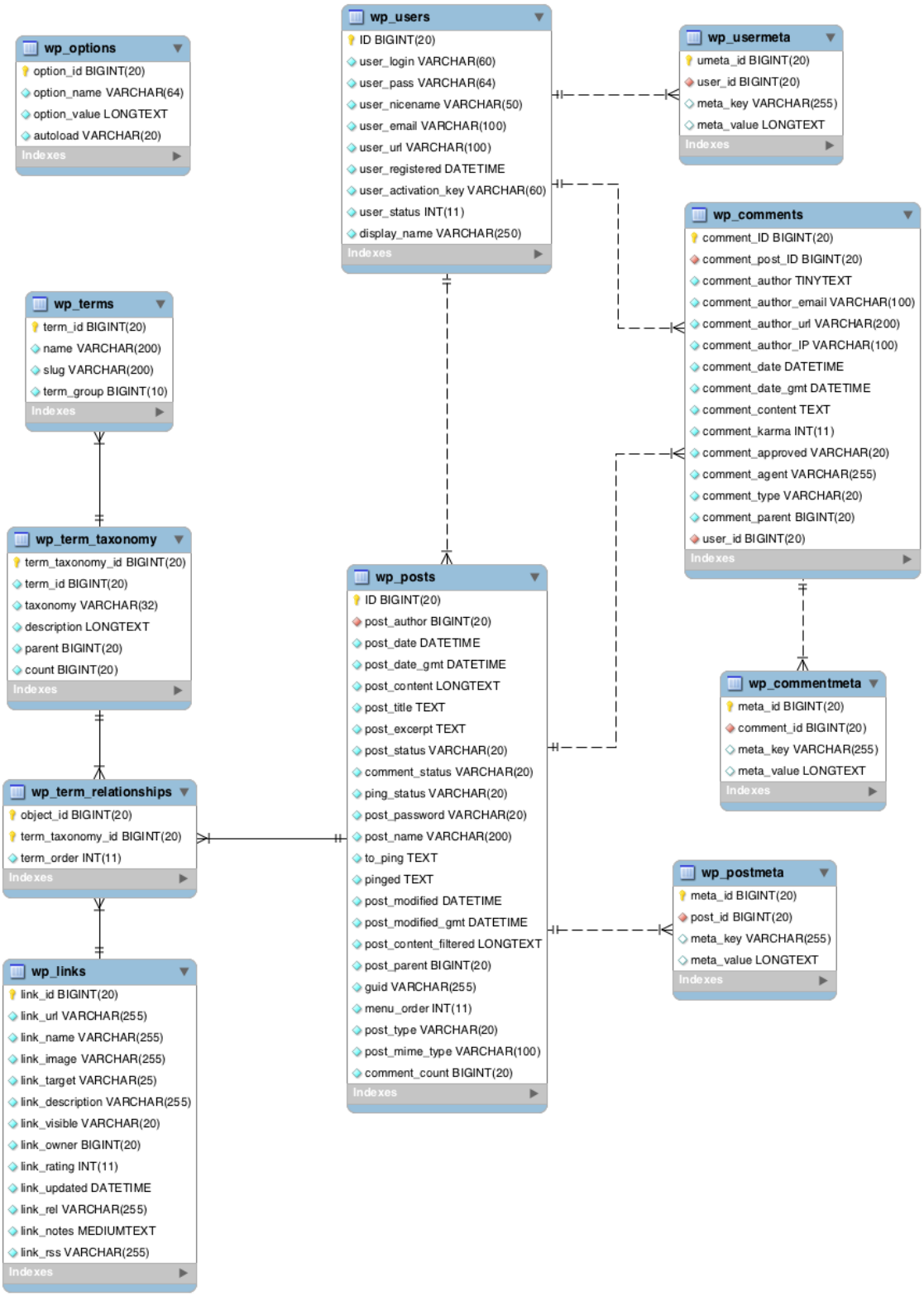
- Collaborative tools: advanced users can help other users who are lost.

- Certificate tools: At the end users receive a Certificate with their image.

Another thing to highlight is that every course could be destinated to different centers. Centers managed by the same administrator (example: different hospitals managed from a local government) or managed by different administrators (example: the same course organized for different universities).

Data base structure

In the next figure it could be observed the database structure from Wordpress that it is used.


wp_options
option_id BIGINT(20)
option_name VARCHAR(64)
option_value LONGTEXT
autoload VARCHAR(20)
Indexes
wp_users
ID BIGINT(20)
user_login VARCHAR(60)
user_pass VARCHAR(64)
user_nicename VARCHAR(50)
user_email VARCHAR(100)
user_url VARCHAR(100)
user_registered DATETIME
user_activation_key VARCHAR(60)
user_status INT(11)
display_name VARCHAR(250)
Indexes
wp_usermeta
umeta_id BIGINT(20)
user_id BIGINT(20)
meta_key VARCHAR(255)
meta_value LONGTEXT
Indexes
wp_comments
comment_ID BIGINT(20)
comment_post_ID BIGINT(20)
comment_author TINYTEXT
comment_author_email VARCHAR(100)
comment_author_url VARCHAR(200)
comment_author_IP VARCHAR(100)
comment_date DATETIME
comment_date_gmt DATETIME
comment_content TEXT
comment_karma INT(11)
comment_approved VARCHAR(20)
comment_agent VARCHAR(255)
comment_type VARCHAR(20)
comment_parent BIGINT(20)
user_id BIGINT(20)
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term_id BIGINT(20)
name VARCHAR(200)
slug VARCHAR(200)
term_group BIGINT(10)
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term_taxonomy_id BIGINT(20)
term_id BIGINT(20)
taxonomy VARCHAR(32)
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parent BIGINT(20)
count BIGINT(20)
Indexes
wp_posts
ID BIGINT(20)
post_author BIGINT(20)
post_date DATETIME
post_date_gmt DATETIME
post_content LONGTEXT
post_title TEXT
post_excerpt TEXT
post_status VARCHAR(20)
comment_status VARCHAR(20)
ping_status VARCHAR(20)
post_password VARCHAR(20)
post_name VARCHAR(200)
to_ping TEXT
pinged TEXT
post_modified DATETIME
post_modified_gmt DATETIME
post_content_filtered LONGTEXT
post_parent BIGINT(20)
guid VARCHAR(255)
menu_order INT(11)
post_type VARCHAR(20)
post_mime_type VARCHAR(100)
comment_count BIGINT(20)
Indexes
wp_commentmeta
meta_id BIGINT(20)
comment_id BIGINT(20)
meta_key VARCHAR(255)
meta_value LONGTEXT
Indexes
wp_term_relationships
object_id BIGINT(20)
term_taxonomy_id BIGINT(20)
term_order INT(11)
Indexes
wp_postmeta
meta_id BIGINT(20)
post_id BIGINT(20)
meta_key VARCHAR(255)
meta_value LONGTEXT
Indexes
wp_links
link_id BIGINT(20)
link_url VARCHAR(255)
link_name VARCHAR(255)
link_image VARCHAR(255)
link_target VARCHAR(25)
link_description VARCHAR(255)
link_visible VARCHAR(20)
link_owner BIGINT(20)
link_rating INT(11)
link_updated DATETIME
link_rel VARCHAR(255)
link_notes MEDIUMTEXT
link_rss VARCHAR(255)
Indexes

The courses developed on the PR2: 360 REWIN e-Learning Platform are designed to be comprehensive, interactive, and adaptable to the needs of a diverse learner base, ultimately aiming to foster an environment where professionals are well-prepared to support and advocate for immigrant women experiencing gender violence.

4. Methodology

The methodology employed on the PR2: 360 REWIN e-Learning Platform is centered around a fully asynchronous learning model, designed to facilitate independent study at the learner's own pace. This approach is particularly effective in accommodating diverse schedules and learning preferences, ensuring that all participants can engage with the course material without the constraints of synchronized schedules.

Asynchronous Learning Model

The platform hosts a comprehensive array of educational content that students can access and interact with at any time. This asynchronous format includes the following key components:

- Content Uploads: All course materials, including lectures, readings, and supplementary resources, are pre-uploaded to the platform. This allows students to access and review these materials at their convenience, catering to different time zones and personal commitments.
- Designed Activities: In addition to static content, the platform includes a variety of interactive activities designed to reinforce learning. These activities, which students can complete on their own schedule, help to apply theoretical knowledge through practical, engaging tasks.
- Self-Paced Progression: Students can progress through the course at their own pace, without the need for real-time interaction with instructors or peers. This self-paced approach is ideal for adult learners who may need to balance educational pursuits with professional and personal responsibilities.

By employing a fully asynchronous methodology, the PR2: 360 REWIN e-Learning Platform ensures that learning is both flexible and accessible, accommodating a wide range of learning styles and personal circumstances.

5. Technical Architecture

Functionalities for Administrators

1. User Management

- Create, edit, and delete user accounts.
- Assign roles and permissions.
- Monitor user activity and performance.

2. Course Management

- Create, edit, and delete courses and modules.
- Import and export educational content.
- Set prerequisites and learning objectives.

3. Reports and Analytics

- Generate student progress and performance reports.
- Analyze data to optimize courses and student retention.
- Monitor instructor effectiveness.

4. Resource Management

- Manage multimedia resource libraries (videos, documents, links).

- Control access to resources based on user roles.

5. Integrated Communications

- Internal communication tools like forums, chats, and announcements.

- Automated email notifications for important events.

6. Customization and Branding

- Customize the user interface to reflect the institution's branding.

- Configure custom domains and login interfaces.

7. Technical Support and Security

- Manage data backups and recovery.

- Implement security measures, such as two-factor authentication.

Functionalities for Users (Students)

1. Content Access

- Intuitive navigation through courses and modules.

- Access to study materials like videos, readings, and interactive exercises.

2. Learning Tools

- Discussion forums and chat rooms for interaction with peers and instructors.

3. Assessment and Feedback

- Take online tests and exams with instant results.

- Receive detailed and personalized feedback from instructors.

5. Social and Collaborative Interaction

- Access community bulletin boards and educational events.

6. Multi-device Support

- Access the platform via computers, tablets, and mobiles.
- Dedicated apps for an optimized user experience on all devices.

7. Accessibility

- Accessibility features for users with special needs, such as subtitles and text-to-speech.
- Adaptive design for various user types and usage conditions.

8. Assistance and Support

- Access to technical support for login or navigation issues.
- FAQs and interactive tutorials for self-help.

6. Distinctive Features of the Virtual Learning Environment

The Virtual Learning Environment (VLE) sets itself apart through the implementation of the Gutenberg Edition Model. This modern editor provides a user-friendly interface that simplifies the process of content creation and editing, integrating multimedia content with ease. Its block-based system is particularly notable for encouraging the development of innovative tools and content structures, making the VLE highly adaptable to various educational needs.

The course creation within this environment is methodical and user-centric, consisting of the following stages:

1. **Title Selection:** Careful determination of a descriptive and relevant course title.

2. **Initial Content Inclusion**: Adding various elements such as text (paragraphs, lists, tables, quotes), webinars, surveys, and other interactive components.

3. **Activity Blocks:** Incorporating a range of activities utilizing the H5P framework, known for its interactive, web-friendly content.

4. **Multimedia Integration**: Embedding videos, images, and documents to create a rich and engaging learning experience.

5. **Student Number Limitation:** Controlling course enrollment to ensure quality interaction and attention.

6. **Course Visibility Settings:** Offering different accessibility levels, from public to role-specific access, enhancing security and exclusivity.

7. **Completion Criteria:** Establishing clear success metrics for course completion, including general approval, student progress, and peer or administrative evaluation.

8. **Instructor Roles**: Assigning tutors and administrators to provide support and manage the course effectively.

9. **Lesson and Section Framework:** Organizing content into digestible lessons and sections, each with its own title, content type, prerequisites, and scheduling.

10. **Global Course Notices:** Communicating important information to all course participants through centralized messages or alerts.

The VLE's ability to merge Gutenberg's intuitive content creation with the dynamic and interactive H5P activity models ensures a distinctive and effective online learning experience. These features collectively contribute to a VLE that is not only rich in content but also interactive and engaging for administrators and learners alike.