MIRACLE

coMics and IllustRations Augmented to tackle CLimate change in primary Education

Project Title: "coMics and IllustRations Augmented to tackle Climate change in primary Education"

Project Administration

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Work package n°3 - MIRACLE MOOC	
Deliverable Title:	
	Work Package 3 R.2 Design of the MOOC
Responsible Partner:	PARAGON-eduTech
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MOOC Design: With Specific Accessibility Criteria and Quality Standards

Work Package 3 Activity 2 Design of the MOOC

This document will define the design of the **MIRACLE MOOC** with specific accessibility criteria and pedagogical, technical, and editorial quality standards. As a roadmap, it will set out the principles that will guide the course architecture, the learning experience, and the certification system, ensuring that all development will be carried out with **accessibility in accordance with WCAG 2.x AA**, a learning-outcomes-based pedagogical approach, and **privacy/GDPR** compliance. It will also ensure the **multilingual** implementation of the course in the consortium languages and terminological consistency throughout the experience.

Drawing on the resources and features available on the project's Moodle platform, it will describe the navigation structure, the organization of the modules, and the integration of activities and assessments, with special emphasis on usability, performance, and inclusion. It will document the completion criteria, the certification pathway, and the analytics instrumentation needed to evaluate progress, satisfaction, and the continuous improvement of learning.

Finally, it will specify the **acceptance criteria**, the responsibilities of the teams involved, and the associated deliverables (specifications, accessibility matrix, editorial guide, navigable prototype, and analytics & validation plan). In doing so, this R2 will serve as the reference framework for the development, review, and publication of the MOOC, ensuring that every design decision will align with the project's objectives and the highest quality standards.

Purpose and scope

The MIRACLE MOOC will be designed and documented to meet demanding criteria for accessibility (WCAG 2.x AA), pedagogical quality, technical quality, and privacy/GDPR. The design will define the course architecture, the certification pathway, the analytics and evaluation plan, the multilingual requirements (EN/ES/EL/PT/HR), and the acceptance criteria that will close the result (Definition of Done).

Technical environment.

The course will be deployed on Moodle 4.0.12 (Build: 20231211), hosted on a server managed with Plesk Obsidian and the Apache/Nginx–Linux–MariaDB/MySQL stack, running PHP 7.4.33. The Moove theme will be configured, and the following plugins will be enabled: Custom Certificate (mod_customcert), Game (mod_game), and Course Completed Enrolment (enrol_coursecompleted). For performance, MUC and OPcache will be activated, indexes in the logs and completion tables will be optimized, cron jobs will be scheduled, and static assets will be served via a CDN when necessary. Security will be ensured with SSL/TLS managed from Plesk and with scheduled backups in both Plesk and Moodle's cron. Analytics will be instrumented through Google Analytics integrated via the theme.

Instructional architecture and navigation.

The MOOC will be organized with a general landing page that will provide access to four core modules, to the scenarios section, and to the certification section. The modules will be titled "Module 1: Climate Science Fundamentals and Sustainable Teaching for Primary Educator," "Module 2: Creating Comics for Digital Augmentation," "Module 3: Digital Augmentation of comics," and "Module 4: Fake news and disinformation." These will be complemented by the "Scenarios" section, which will gather applied lesson plans, and by "Get your certificate," which will centralize certificate issuance. Each module will include a consistent front page with objectives, prerequisites, estimated duration, completion criteria, materials, and activities (readings, short videos, H5P interactions, forums, challenges, and quizzes), and it will include a "How to proceed" block with next/previous links. The navigation experience will be reinforced with breadcrumbs, a consistent side menu, a section index, a back-to-course button, and a visible progress panel. Activity- and module-level completion tracking will be configured, and overall course completion will require both completion of the defined modules and submission of the final survey located in the certification section. All visible text will be offered in the project languages using Moodle multi-language strings to ensure consistency and terminological coherence.

Pedagogical quality.

Learning outcomes will be stated in measurable terms for each module and will be explicitly aligned with content, activities, and assessment. A variety of modalities will be promoted—guided readings, micro-videos, practical tasks, moderated forums, H5P, and quizzes—with progressive scaffolding and transparent achievement criteria. The course will provide formative feedback and, where appropriate, allow retries. A diagnostic (pre) and a final (post) assessment will be applied to measure progress and satisfaction. Educational resources will be published under open licenses, and an editorial guide will ensure consistent style, inclusive tone, and glossary usage.

Accessibility (WCAG 2.x AA).

All content will be structured with semantic headings and a logical focus order, and full keyboard operability will be guaranteed, including H5P interactions. Contrast, typographic scalability, and control of motion/time will be ensured, and disruptive flicker or animations will be avoided. All images, infographics, and iframes will include meaningful alternative

text; links will be descriptive and will indicate when they open in a new window. All videos will include captions and a transcript, and audio description will be added when pertinent. Equivalent routes will be provided when any interaction is not fully accessible, and downloadable documents will be delivered as tagged, accessible PDF/HTML. Skip links and the theme's accessibility toolbar will be enabled, texts will be written in plain and inclusive language, and an easy-to-read version will be offered where appropriate. Finally, an Accessibility Statement for the MOOC will be published together with a contact channel for requesting reasonable accommodations.

Certification pathway.

The "Get your certificate" section will present clear instructions, will host the final survey, and will allow certificate download. The certificate will only be enabled when two conditions are met: course completion (according to the required modules and activities) and submission of the final survey. The document will be issued as an accessible PDF (real text) and will include the participant's name, the exact course title, the date in ISO format, a unique ID/QR, the issuer (the consortium and, where applicable, the certifying university), and institutional signatures or seals. The same page will include privacy microcopy explaining purpose, legal basis, and retention periods, together with links to the data policy and the accessibility statement.

Privacy, data, and retention.

A data retention table will be defined to specify the periods applicable to activity data, analytics, certificates, forums, and questionnaires. Processing of personal data will be minimized; data will be anonymized or pseudonymized where possible; and mechanisms for the exercise of rights will be enabled. This framework will be documented in a record of processing activities linked from the site footer.

Analytics and learning evaluation.

Events and goals will be configured in both Moodle and Google Analytics to record, at minimum, completion of the pre-assessment, completion of activities and modules, submission of the final survey, and certificate downloads. Progress and dropout rates by module, session duration, navigation paths, and devices will be analyzed, and these results will feed the course's continuous improvement cycle.

Workflow and quality assurance.

A specifications document will be consolidated that captures the course map, accessibility criteria, rubrics, and the certification process. Based on it, a navigable prototype will be assembled in Moodle with representative samples from each module. Accessibility and QA tests—keyboard, screen reader, contrast, visible focus, mobile responsiveness, and performance—will be conducted, an internal pilot will be run, and issues will be tracked on a board with priority, owner, and due date until closure. After publication of version 1.0, iterative releases (1.1, 1.2, …) will be planned, prioritizing actions with the greatest impact on accessibility and learning.

Roles and responsibilities.

Coordination will manage schedule, risks, communication, and version control. Instructional design will ensure alignment among outcomes, activities, and assessment and will maintain the editorial guide. The accessibility role will audit WCAG compliance, produce the accessibility matrix, and issue the statement. The technical team will configure the platform, plugins, performance, backups, and analytics. QA will run cross-testing and verify issue closure. The languages team will ensure terminological consistency and correct multilingual implementation.

Indicators and targets.

Targets will be set to reach at least 95% WCAG AA compliance in the first audit and 100% in the second; to guarantee captions and transcripts in 100% of audiovisual resources; to keep load times under 3 seconds on key pages under standard network conditions; to achieve a completion rate of 40% or higher with an average satisfaction of 4/5 or higher; to ensure that 100% of certificates are issued only when course completion and the final survey are both satisfied; and to resolve critical issues in under five days.
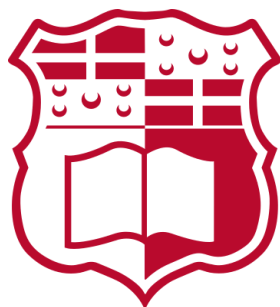
Deliverables and acceptance criteria.

The outcome will include the MOOC Specifications Report (architecture, flows, multilingual implementation, and certification), the Accessibility Matrix with evidence, the Editorial Guide and its checklists, the navigable Moodle prototype, the Analytics and Validation Plan, and the Accessibility Statement along with the Data Retention Table. R2 will be considered complete when the consortium approves the Report and the Matrix, the prototype passes technical QA and a WCAG AA audit, the certification pathway is operational with its two conditions and an accessible certificate, and the analytics plan, the accessibility statement, and the retention table are published and accessible from the course.