



Gamified Platform for the Blended Training Activities (BTAs)

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Abstract	This document is intended as a text file annexed to IO3 and is distributed as release notes to the PLEIADE Gamified Platform – first release, which can be reached online at the following URL: https://moodle.pleiade-project.eu/ . The main scope of this file is to document the configuration of the platform to provide a legacy for other initiatives aiming to promote motivation, participation, interaction and peer collaboration in Teacher Professional Development settings. Particularly, this document describes the activities carried out with reference to: 1) The users requirements analysis carried out; 2) The rationale behind the choice of the Moodle platform as the backbone of the PLEIADE Gamified Platform; 3) The actions carried out to make Moodle suitable for the project objectives and to release it in the production environment, ready for use.
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1 Executive summary

This document is intended as a text file annexed to IO3 and is distributed as release notes to the PLEIADE Gamified Platform. The Gamified Platform can be reached online at the following URL: <https://moodle.pleiade-project.eu/>.

The main scope of this text file is to document in detail the configuration of the Gamified Platform to provide a legacy for other initiatives aiming to promote motivation, participation, interaction and peer collaboration in Teacher Professional Development (TPD) settings. Particularly, this document describes the activities carried out with reference to:

- The specification of the user requirements carried out with the aim of specifying what the users expect the Gamified Platform to be able to do.
- The rationale behind the choice of the Moodle open-source e-learning platform as the backbone of the PLEIADE Gamified Platform, which is therefore a customized version of the Moodle (version 3.9.4) open-source e-learning platform.
- The actions carried out to make Moodle suitable for the project objectives and to release it in the production environment, ready for use.

Following a general introduction to IO3 (Section 2), the document provides a detailed description of the project activities leading to the design and the implementation of the Gamified Platform and the expected next steps, as it follows:

- Section 3. This section describes the main characteristics of the Gamified Platform, its background with reference to the PLEIADE Project, its development process and the time schedule. Furthermore, this section describes the rationale behind the adoption of Moodle, with specific reference to the list of major functionalities and processes that are of interest for the project’s needs.
- Section 4. This section presents the User Requirements analysis carried out in terms of a description of the system to be developed. Particularly, the user requirement will be here presented in the following six main logical processes: 1) user account and basic functionalities, 2) courses (learning activities), 3) communication and collaboration, 4) gamification and motivation, 5) self-regulated learning and personalization, and 6) assessment, self-assessment and tracking.
- Section 5. This section presents the actions carried out to set up the Gamified Platform, with particular attention to the activities for: 1) adaptation and customization, 2) testing and debugging, and 3) deployment and maintenance.
- Section 6. This section presents the tools needed to enable following functionalities: 1) Online synchronous audio/video communication delivery, 2) Gamification and motivation, 3) Self-regulated learning and personalization, and 4) Learning Analytics. Such functionalities were identified as project’s needs (see proposal) and further informed by the activities carried out to define IO1, that is, the Blended Teachers’ Professional Development Pathway. Therefore, specific tools were identified to operationally enable such functionalities into the Gamified Platform. Some of these tools have been specifically designed and implemented and/or adapted for the project’s needs.
- Section 7. This section presents the actions carried out to develop specific learning analytics functionalities into the Gamified Platform. Particularly, we adopted a descriptive approach

that will be monitoring the online component of the PLEIADE Blended Training Activities (BTAs). The tools devoted to enable analytics into the Gamified Platform are the 4Cs¹ Dashboard – to monitor individual and collective reflection on practice sharing, also exploiting the adopted gamified metaphor - and the Moodle learning analytics system – to monitor engagement and participation of users at different levels.

- Section 8 - This section introduces the revision activity of the Gamified Platform that is expected between M22 and M24 and that will be run in synergy with IO1 and the implementation of the BTAs (Passarelli, Dagnino, Persico, Pozzi, & Nikolova, 2021). Particularly, this task will be based on data collected during the BTAs.

¹ 4Cs stands for Consume, Create, Connect and Contribute. See section 7.1 for a full explanation and details.

2 Introduction

This document is intended as part of IO3 and is distributed as release notes to the PLEIADE Gamified Platform, version 1. Particularly, two are the expected results from IO3:

- a workspace - the Gamified Platform itself, where PLEIADE teachers will interact during the BTAs and the enactment among themselves and with their tutors;
- an accompanying text file – which is this document.

The main aim of the Gamified Platform is hosting the online component of the Blended Training Activities (BTAs) and (during enactment) supporting the sharing and peer reviewing of the learning activities conceptualized with O2.

The main scope of this text file is to document in detail the configuration of the Gamified Platform to provide a legacy for other initiatives aiming to promote motivation, participation, interaction and peer collaboration in Teacher Professional Development (TPD) settings.

2.1 Description of IO3

The Gamified Platform will operate as a scaffolded context for teacher interaction to design PLEIADE - inspired classroom activities and the exchange of related experiences. According to the PLEIADE proposal, the platform is in English, supporting a multilanguage interface (Bulgarian, Greek, and Italian). Given a wealth of existing systems and tools that provide basic e-learning functionalities, and given the short time span available to setup the Gamified Platform, the PLEIADE proposal states that the Gamified Platform should be developed as a customization of an already existing system/tool. Particularly, we decided to use Moodle (<https://moodle.org/>), one of the most popular existing Learning Management System (LMS), because it is a flexible, open-source system and both CNR-ITD and the University of Sofia already have considerable experience with.

Still according to the PLEIADE proposal, in terms of sustainability and transferability, the Gamified Platform will remain available for (at least) 24 months after the project ends. Particularly, the platform will remain available to the PLEIADE schools to share knowledge and artefacts, including (but not limited to) those developed in PLEIADE.

In order to produce IO3, the following specific tasks have been accomplished:

1. Identification of the functionalities needed by the PLEIADE teachers during the BTAs based on the User Requirements analysis and the BTA design, that is, IO1. [DONE].
2. Set up of the backbone of the platform, that is, the Moodle Learning Management System. [DONE].
3. Identification and integration of the tools needed to enable the additional gamification and communication functionalities (e.g., game mechanics for the “gamification layer”; self-regulated learning tools to better address PLEIADE contexts and users; audio/video conferencing tools). [DONE].
4. Specifications and development of learning analytics functionalities needed to support gamification and self-regulated learning. [DONE].
5. Revision of the platform configuration based on data collected during the Blended Training Activities. [TO BE DONE between month 22 and month 24 of the project]. A second version

of the Gamified Platform and of this document will be released at month 24 of the PLEIADE project.

2.1.1 Timeline

IO3 is running from 2020-09-01 to 2022-08-31 (see Project GANTT chart for intermediate deadlines/milestones). Originally, the first release of platform was due at month 7 of the project (i.e., end of March 2021). Following a re-scheduling of some project activities, approved by the project Steering Committee, this deadline was moved to month 8 (i.e., end of April 2021).

Based on the internal project calendar, which provides for an internal review of the quality of the outputs, the preliminary version of the platform is to be released for the internal review process by 10 April 2021. Following the validation, version 1 of the platform is due by April 30th, 2021, in time for the beginning of the BTAs (i.e., May 2021).

The final release of the Gamified Platform (due at month 24, that is August 2022) will be revised according to the feedback received by the teachers during their Blended Training Activities (month 22-24).

2.1.2 Partners’ contribution

The partners involved with major effort (in terms of working days) in this output are ITD-CNR and University of Sofia, as follows:

- CNR-ITD will lead IO3, guaranteeing the scientific coordination and the support to the other partners; moreover, CNR-ITD will be responsible (as task leader) for Task 1 and Task 4 (see tasks’ list mentioned above).
- University of Sofia will be responsible (as task leader) for Task 2, Task 3 and Task 5 (see tasks’ list mentioned above).

Other partners involved with less effort (in terms of working days) are:

- Open Lab (5 days in total), which will contribute to the internal review of the platform.
- Schools (2 days in total, each school) which will provide their feedback on the platform during the enactment (month 22 – month 24 of the project).

3 The PLEIADE gamified platform

In this section, we will focus on those features of the PLEIADE gamified² platform that have been specifically designed for the objectives of the project and can be (re)used in different contexts. The PLEIADE Gamified Platform can support teachers in their TPD activities by sharing documents, discussing practices, commenting on case studies, etc. The Gamified Platform sustains collaboration and communication with web conferencing, forums, etc. It is a web-based application intended to support the online component of a TPD process in both blended and hybrid learning contexts. In this context, by blended we mean an alternance in time of learning activities in presence and at a distance, both synchronous and asynchronous. By hybrid, we mean a mix of in presence and online activities that take place simultaneously, since some participants are attending an event face-to-face while others may have to attend online. This “double” (Blended and Hybrid) function of the gamified platform is a requirement dictated by the limited mobility of the PLEIADE teachers due to the recent pandemic developments. Due to the many uncertainties that the pandemic is causing, IO1 - that reports the design of BTA and is supposed to be released at month 8 like this Intellectual Output - has taken a flexible approach allowing for further adaptation to the pandemic events in terms of Blending versus Hybridization of online and face-to-face activities (Passarelli et al., 2021).

Given the importance of the community/social dimension (sustaining the sharing of the practices), the tool must also be equipped with proper functionalities sustaining collaboration and communication among users. More specifically, in the project proposal the Gamified Platform was described being equipped with specific tools according to four conceptual dimensions:

- Tools for synchronous audio/video communication, allowing synchronous exchange and collaboration among teachers.
- Collaborative-oriented and teacher-appropriate gamification tools (motivation).
- Mechanisms and tools for promoting self-regulated learning (SRL) strategies and personalization.
- Learning Analytics applications to track networked knowledge sharing practices and underpin the above functions.

² Gamification has been defined by Deterding, Dixon, Khaled, & Nacke (2011) as the use of game elements in non-game contexts. The concept has become increasingly popular in the last decades as a powerful way of motivating, engaging, and promoting desired behaviors in learners (Caponetto, Earp & Ott, 2014), including adult professionals such as teachers. However, especially when it comes to this last kind of target, some important limitations and caveats concerning gamification should be taken into consideration (Bogost, 2013). Indeed, gamification intended as “pointification” and mechanics that foster competition may turn out to be counterproductive (Esteves, 2017). As an alternative, Lane and Prestopnik (2017) propose an alternative approach to gamification that eschews “metric” and competition focused design in favour of what they call “diegetic connectivity,” where “story, world, and aesthetic presentation tightly bind mechanics to purposeful tasks and vice versa” (pp. 229). They posit that a story-focused mindset can help participants to overcome the non-trivial challenge of complex tasks and enhance their motivation, engagement, and task performance. Particularly, in the case of teacher training initiatives, previous research has demonstrated how the adoption of a metaphor (such as, for example, the journey metaphor) may facilitate reflection and, specifically, meta-reflective thinking, which is an essential component of professional learning (Saban, 2006). In this light, perhaps the expression “Playful Platform” might be preferable to “Gamified Platform”, but the latter seems to be more coherent with the project documentation and, not least, the project proposal.

Gamification is the keyword characterizing the online platform, and it must be at the basis of its design according to the following four reference ideas:

- Fostering teachers’ acceptance of new methods and tools, which is central to an effective professional development.
- Promoting the development and sharing of inclusion-oriented and collaborative learning designs.
- Boosting teachers’ motivation to enact those designs in class.
- Promoting sharing and peer review of each other’s designs for further development.

3.1 Adapting Moodle as a basis for the gamified platform

In the context of the PLEIADE Project, Moodle was identified from the beginning as the most suitable candidate to be adapted as a technological basis for the Gamified Platform.

Moodle (<https://moodle.org/>) is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments ([https://docs.moodle.org/310/en/About Moodle](https://docs.moodle.org/310/en/About_Moodle)). Moreover, Moodle relies on an extremely customisable core that comes with many standard features (<https://docs.moodle.org/310/en/Features>).

To inform and motivate our initial intuition with a theoretical foundation, we first of all investigated scientific research. Recent studies confirmed that Moodle can be validly used in learning and training contexts where gamification is adopted to promote motivation among participants. Particularly, a recent systematic review of the use of gamification in flipped learning found that Moodle is one of the most preferred platform and points, badges and leaderboards are frequently used game elements for gamification (Ekici, 2021). Nevertheless, the risk of reducing gamification to “pointsification” in such contexts should be considered (Piasecki, 2018). In order to mitigate such risk, in the context of the PLEIADE project we have foreseen that the *possible* use of the above mentioned game elements should be well integrated with the content being learnt and a metaphoric narrative that accompanies the whole “journey” through the BTAs, as described in IO1 (Passarelli et al., 2021).

Most studies report case studies where Moodle is used to instantiate gamified approaches that exploit different techniques and processes. Donath et al. (2020) presented a mapping from gamification concepts to Moodle elements where various gamification techniques were used in a course design, such as recording and presenting the learner’s progress, role-playing and similar. In another study, gamification elements such as points and different types of rewards, the progress bar, the leaderboard, content locking and items trading were implemented in Moodle (Moreira et al, 2020).

An interesting perspective, which combines gamification and learning analytics - a technical feature of which Moodle is natively equipped - is presented by Tzelepi et al. (2019). In their study, they investigated gamification and learning analytics tools for promoting and measuring Communities of Inquiry in Moodle courses. In such context, learning analytics are used by the instructors to reward specific good social practice (related to the theoretical model to be promoted, that is Communities of Inquiry) through gamification.

Another important reason which made us lean towards Moodle was that both ITD-CNR and University of Sofia have strong technological and pedagogical knowledge/skills in Moodle setup, administration, and use. This background would positively impact both the quality and the time required for adapting Moodle to the needs of the project.

Other technical and non-technical reasons behind the choice of Moodle were identified in the following strengths:

- Moodle natively supports a multilingual installation.
- Moodle is free and open-source software, and its international development community provides more than adequate technical and user documentation.
- Moodle can be easily customized in its graphic configuration and layout.

As Moodle would represent a flexible and modular learning management system, and scientific research offered us encouraging confirmations, at this first stage of the project we were quite confident that Moodle could be proactively used – in the context of the PLEIADE Project - for:

- Supporting learning activities and learning resources within structured, predefined learning contexts.
- Managing interactions and connections and organizing information within multiple less-structured, self-directed knowledge contexts.

Specifically, it was quite clear that the Gamified Platform based on Moodle would be able to provide users with active learning tasks (both individually and collaboratively), self-regulated learning prompts/facilitations, and gamification mechanics and elements.

This initial intuition, however, had to be validated by a more precise and contextual analysis. This validation happened in two stages. More specifically, a first, initial analysis of Moodle’s available functionalities confirmed our choice with respect to the specific tools of the four conceptual dimensions required by the project, as shown in Table 1.

Table 1: Checklist of the Moodle available functionalities with respect to the project’s needs

Functionalities/tools needed	Technical notes	Availability in Moodle
Tools for synchronous audio/video communication, allowing synchronous exchange and collaboration among teachers.	Although Moodle does not natively have a synchronous communication tool, it can easily be integrated - still with an open-source solution (i.e., BigBlueButton) already identified and tested in other contexts. Certified integration: https://moodle.com/certified-integrations/bigbluebutton/	Yes (BBB integration) <i>The level of use will be defined in accordance with IO1</i>
Collaborative-oriented and teacher-appropriate	Given that the approach to gamification that is planned to be adopted in PLEIADE is based on the design of a narrative	Yes

<p>gamification tools (motivation).</p>	<p>process and on storytelling (see IO1; Passarelli et al., 2021), Moodle has functionalities (both native and in terms of plugins) that allow to instantiate gamification elements within the learning process.</p>	<p>(core + plugin)</p>
<p>Mechanisms and tools for promoting self-regulated learning (SRL) strategies and personalization.</p>	<p>The approach adopted in PLEIADE is procedural and the level of instantiation will depend on the design of the activities (see IO1; Passarelli et al., 2021). In any case, Moodle has features that allow to support SRL and personalization processes at various levels (e.g., forum for meta-reflection). Furthermore, ITD-CNR will provide the PLEIADE project with a Moodle plugin specifically devoted to monitor SRL behaviours (i.e., 4Cs Dashboard).</p>	<p>Yes (core + plugin)</p>
<p>Learning Analytics applications to track networked knowledge sharing practices and underpin the above functions.</p>	<p>Moodle natively support analytics: https://docs.moodle.org/310/en/Analytics</p> <p>Additionally, the aforementioned 4Cs Dashboard leverages an analytics-based approach to track user activity.</p>	<p>Yes (core + plugin)</p>

The second stage of Moodle validation occurred downstream of the User Requirement analysis and will be presented later in this document.

3.2 Development process of IO3

As already mentioned, the Gamified Platform is not born from scratch, but rather derived from the **adaptation** and **customization** of an already existing open-source platform (i.e., Moodle). More specifically, with reference to what we had to implement for the Gamified Platform, we already had a masterplan (i.e., the project proposal). This means that system modeling and major processes of the Gamified Platform should be defined mainly according to what we have promised in project proposal. For this reason, no formal development process was envisaged. In doing this, we have also considered that most of those processes and functionalities were already well described in the Moodle official technical documentation – so we could rely on that.

A development process usually involves “iterative and incremental development” methods (Cockburn, 2009; Larman & Basili, 2003). Iterative and incremental development is any combination of both iterative design or iterative method and incremental build model for development. In such

settings, the core activities are processes, requirements, design, engineering, implementation, testing, debugging, deployment, and maintenance. In the case of the Gamified Platform, this formal process was modified and adapted to the needs of the PLEIADE project. Particularly:

- The initial phase of planning and identifying the processes was carried out on the basis of the four conceptual dimensions defined by the project proposal - which were declined at more operational levels to identify proper functionalities and tools, based on such processes.
- The requirement analysis/concept development phase was conducted through a design approach that, starting from our knowledge of the Moodle platform, was informed from 1) the user needs analysis run under IO1 and 2) specific consultations with the designers of the BTAs (authors of IO1).
- The design, engineering, and implementation phases concerned only some specific features of the platform which were not natively available in Moodle, as well as its graphic and visual customization.
- The testing, debugging, deployment, and maintenance phases have been maintained as defined by the reference model.

Therefore, the development process of the PLEIADE Gamified Platform - and therefore of IO3 in general - has been adapted to the PLEIADE Project’s needs, as presented in Figure 1.

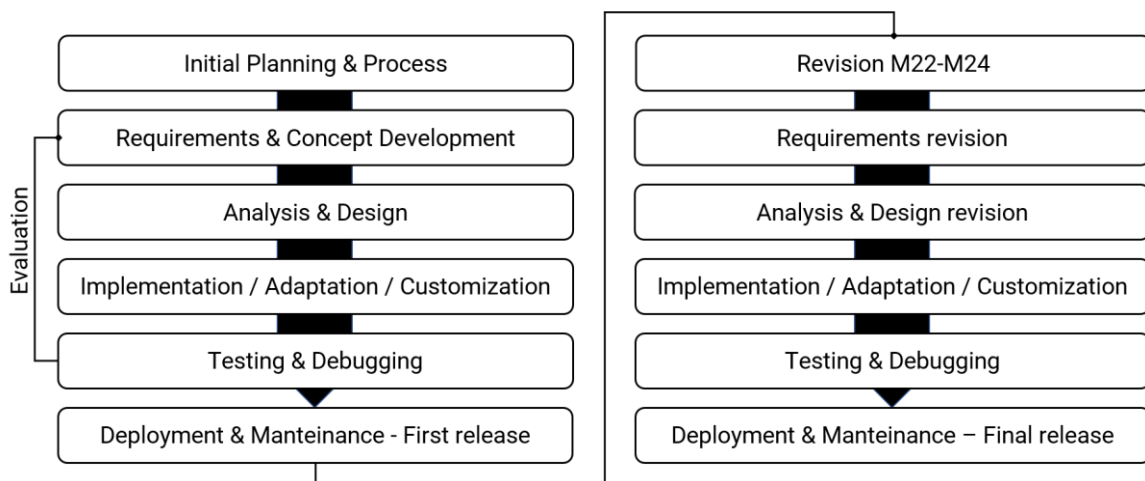


Figure 1: IO3 - The Iterative and incremental development process

The IO3 development process will be presented in the following sections, organized in the following steps:

- Identification of the functionalities needed by the PLEIADE teachers based on the User Requirements analysis.
- Set up of the Learning Management System.
- Identification and integration of the tools needed to enable the functionalities.
- Specifications and development of learning analytics functionalities needed to support gamification and self-regulated learning.
- Revision of the platform configuration based on data collected during the Blended Training Activities.

4 User requirements analysis

Generally, the User Requirements Specification (URS) specifies what the user expects the system to be able to do. URS is written early in the validation process, typically before the system is created. In the context of the PLEIADE Project, this task was a very important preliminary step informing the choice of the functionalities and configuration of the main functionalities to be made available through the Gamified Platform.

More specifically, we identified two specific categories of users of the PLEIADE Gamified Platform: 1) the PLEIADE teachers attending the BTAs and 2) the designers of the BTAs (i.e., ITD-CNR and University of Sofia) who will have to use the Gamified Platform. With these target users in mind, we conducted a user needs analysis in the context of IO1 (see IO1 for details; Passarelli et al., 2021) which firstly informed the design of the BTAs, and then was also used to inform (indirectly) IO3.

After that, we adopted a design approach allowing us to describe scenarios of 1) what we already have (at least partially) in mind, starting from the knowledge of the Moodle platform, and putting this in conjunction with 2) the information deriving from the user needs analysis of IO1 and 3) specific consultations with the designers of the BTAs (authors of IO1).

As a result of this process, operational scenarios were prepared (in terms of **user stories**) to describe specific processes and functionalities of the Gamified Platform and to map these processes and functionalities in contexts of use.

The current list of user stories produced for the Gamified Platform can be accessed here:

<https://docs.google.com/spreadsheets/d/16CrS0T9Fv93vmpJtCy5KwDiba6KQjU0hLJqwUcgpm1s/p/revision>

More importantly, in this phase Moodle was validated as an adequate candidate to serve as a basis for the Gamified Platform. In fact, it was possible to verify the effectiveness of the functionalities already available in Moodle and / or specifically to be developed according to the specific needs of the project, up to map them all.

The Gamified Platform User Requirement analysis is presented in the following and is not intended to be a technical document. User requirements were organized in six main logical processes and then declined in their related functionalities:

1. User account and basic functionalities.
2. Courses (learning activities).
3. Communication and collaboration.
4. Gamification and motivation.
5. Self-regulated learning and personalization.
6. Assessment, self-assessment, and tracking.

The detailed list of user stories organized into the logical processes mentioned above can be found here:

<https://docs.google.com/spreadsheets/d/1xr2eweu4gXhLSvu1RoT5agvHEPHpmBuqEOeKgN645bw/edit?usp=sharing>

Also, requirements for each functionality were preliminary defined with reference to their level of priority (High, Medium, Low). Particularly, core functionalities are prioritized as high, midterms as medium, and hypothetical/desirable as low.

Based on their priority, the functionalities presented in the following will be “ready & available” on the Gamified Platform, but they will not necessarily all be used during the BTAs. Their level of usage will mainly depend on the choices made by the designers of the BTAs.

4.1.1 User account and basic functionalities

Table 2: User Requirements - User account and basic functionalities

		Priority
Authentication	Manual accounts - accounts are created manually by administrator.	H
	E-mail-based self-registration - for enabling users to create their own accounts.	M
Registration/Enrolment	Platform/program registration (self/manual/guest).	H
	Course registration (self/manual/guest).	H
User profile	Cover page	H
	Basic contact info	H
	Photo	H
	Demographic info	H
	Visibility options	H
	Password management	H
Personalized dashboard	A customizable page for providing users with details of their progress and upcoming deadlines.	H

Multilanguage	Localization of the User Interface in different languages (at least Bulgarian - English - Greek – Italian)	H
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4.1.2 Courses (learning activities)

Table 3: User Requirements – Courses (learning activities)

		Priority
Flexibility on delivering learning	Support of various format of courses, lessons or learning paths.	H
Ability to managing various educational resources	Documents, multimedia files, links etc.	H
Course overview	Tutors/Participants.	H
Announcements	All levels: site/course/group.	H

4.1.3 Communication and collaboration

Table 4: User Requirements – Communication and collaboration

		Priority
Tool for synchronous audio/video communication	Real-time synchronous discussions in a course.	H
Forums	Asynchronous discussions in a course.	H
Calendar	Calendar.	H
Surveys / Polls	For getting feedback.	M
E-mail support	All levels: site/course/group.	H
Internal messaging	Internal messaging.	H
Group-based activities	Synchronously.	H
	Asynchronously.	H

4.1.4 Gamification and motivation

Table 5: User Requirements – Gamification and motivation

		Priority
Digital badges	A validated indicator of accomplishment, skill, quality, or interest that can be earned.	H
Activity completion	To set completion criteria in a specific activity's settings.	H
Restrict access	To restrict the availability of any activity or even a course section according to certain condition.	H
Inventory of items	To add an inventory of items to any course and let participants find items by exploring the activities.	L
Completion progress	A time-management tool for participants.	L
Metaphorization of the environment	Graphic customization of the space rocket metaphor (see IO1)	H

4.1.5 Self-regulated learning and personalization

Table 6: User Requirements – Self-regulating learning and personalization

		Priority
4Cs Dashboard	To monitor individual and collective reflection on practice sharing	H
Group choice	Participants can access specific course activities or resources based on the group they have chosen	M

4.1.6 Assessment, self-assessment and tracking

Table 7: User Requirements – Assessment, self-assessment and tracking

		Priority

Assessment and self-assessment tools	(Self)assessment based on individual or group- activities.	H
Log analysis	Data stored in the system that concerns participants’ profiles and achievements, activities logs and results.	H
Events monitoring	4Cs Dashboard (choice of the events to be monitored, see IO1; Passarelli et al., 2021)	H
Learning Analytics	To monitor engagement and participation	M

5 Setup of the Learning Management System

We decided to adopt **Moodle version 3.9.4**. Official releases notes can be found here:

https://docs.moodle.org/dev/Moodle_3.9.4_release_notes.

University of Sofia is hosting the Moodle platform on their server. Particularly, two specific server environments were implemented to run Moodle:

- Development - <https://dev-moodle.pleiade-project.eu/>
- Production/Live - <https://moodle.pleiade-project.eu/>

5.1 Server specification

- Database - Percona SQL 5.7 (database server is on separated server).
- Disk space - 350G (RAID10 SAS hard drives).
- Processor - 12 cores (Intel Xeon Gold).
- Memory - 36G.
- OS - CentOS 8.3.
- Frontend is Apache httpd with php-fpm (PHP 7.3).

5.1.1 Integrating Moodle and BigBlueButton

- BigBlueButton version - 2.2.36
- Moodle plugin for integration: BigBlueButtonBN
 - URL: https://moodle.org/plugins/mod_bigbluebuttonbn
 - Version: 2.4-rc (2019101005)

5.2 Adaptation and customization

With reference to adaptation and customization, first of all the graphic theme of Moodle was customized to fit the PLEIADE visual identity. Particularly, we installed the “Fordson” theme (https://moodle.org/plugins/theme_fordson).

Furthermore, additional functionalities and processes were added to the basic core Moodle installation. These characterizations - which emerged from the requirements analysis phase and were described there (see Section 4) - had to do with the following aspects of Moodle:

- Basic functionalities.
- Web conferencing (online synchronous audio/video communication).
- Gamification and motivation.
- Self-regulated learning.
- Analytics.

The details of the adaptation and customization activities are shown in Table 8.

Table 8: Adaptation and customization – additional functionalities and processes

Functionalities	Tools (URA)	Adaptation/Customization
Basic functionalities	Multilanguage	Language packs were installed (Bulgarian - English - Greek - Italian).
Web conferencing (online synchronous audio/video communication)	Tool for synchronous audio/video communication	BigBlueButton was integrated.
Gamification and motivation	Metaphor	<p>The graphic/visual customization of the space rocket metaphor for enacting gamification (as defined in IO1) was deployed in the following user interface elements.</p> <p>Course format: Tiles https://moodle.org/plugins/format_tiles – to add themed icons elaborated according to the gamification-based metaphor.</p> <p>Other elements: 4C Dashboard “spaceship version”.</p>
Self-regulated learning	4Cs Dashboard	The 4Cs Dashboard (<i>graphical interface</i>) was highly customized to specifically target the PLEIADE context and be adapted to the project’s needs.
Analytics	4Cs Dashboard (choice of the events to be monitored)	The 4Cs Dashboard (<i>events monitoring</i>) was highly customized to specifically target the PLEIADE context and be adapted to the project’s needs.

Below, some significant screenshots are presented to show the level of graphic customization of the Gamified Platform and its level of integration with the visual identity of the project.

5.2.1 The user dashboard

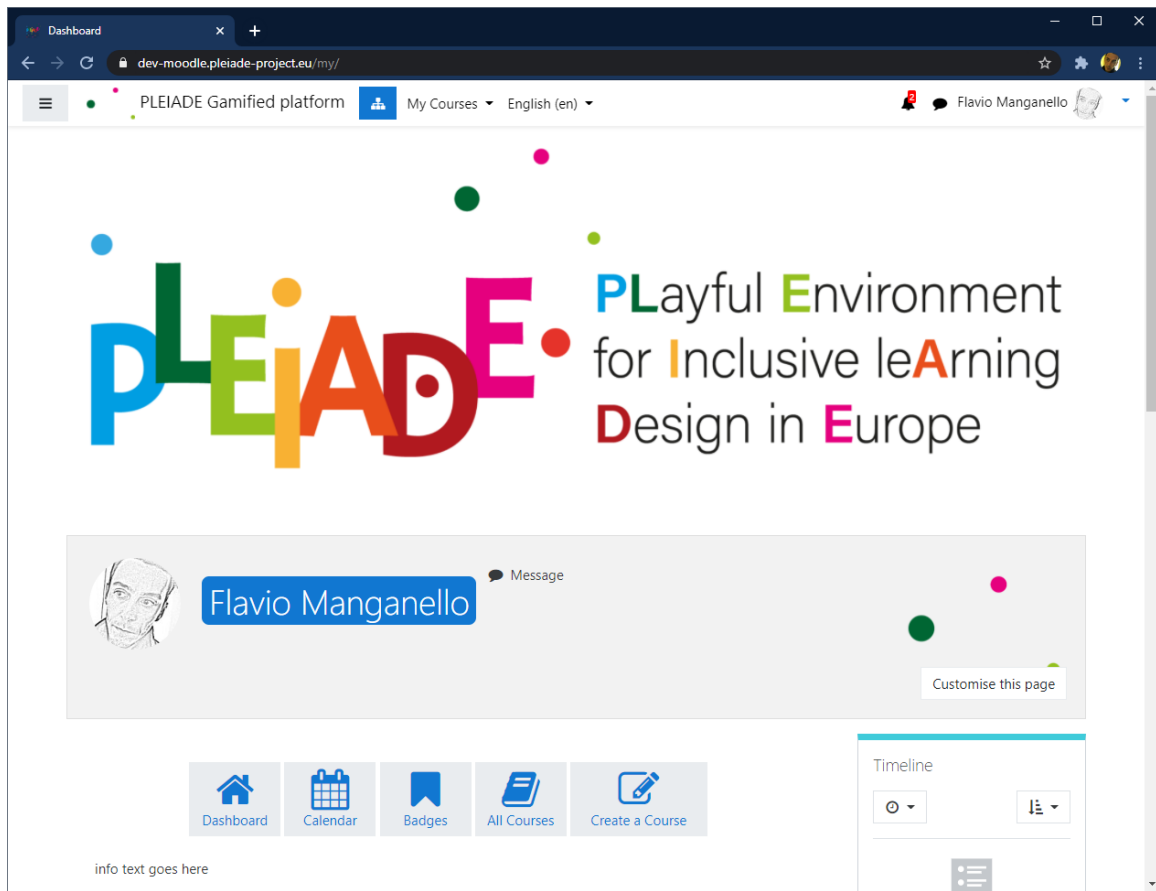


Figure 2: IO3 – Gamified Platform – User Dashboard

5.2.2 The user profile

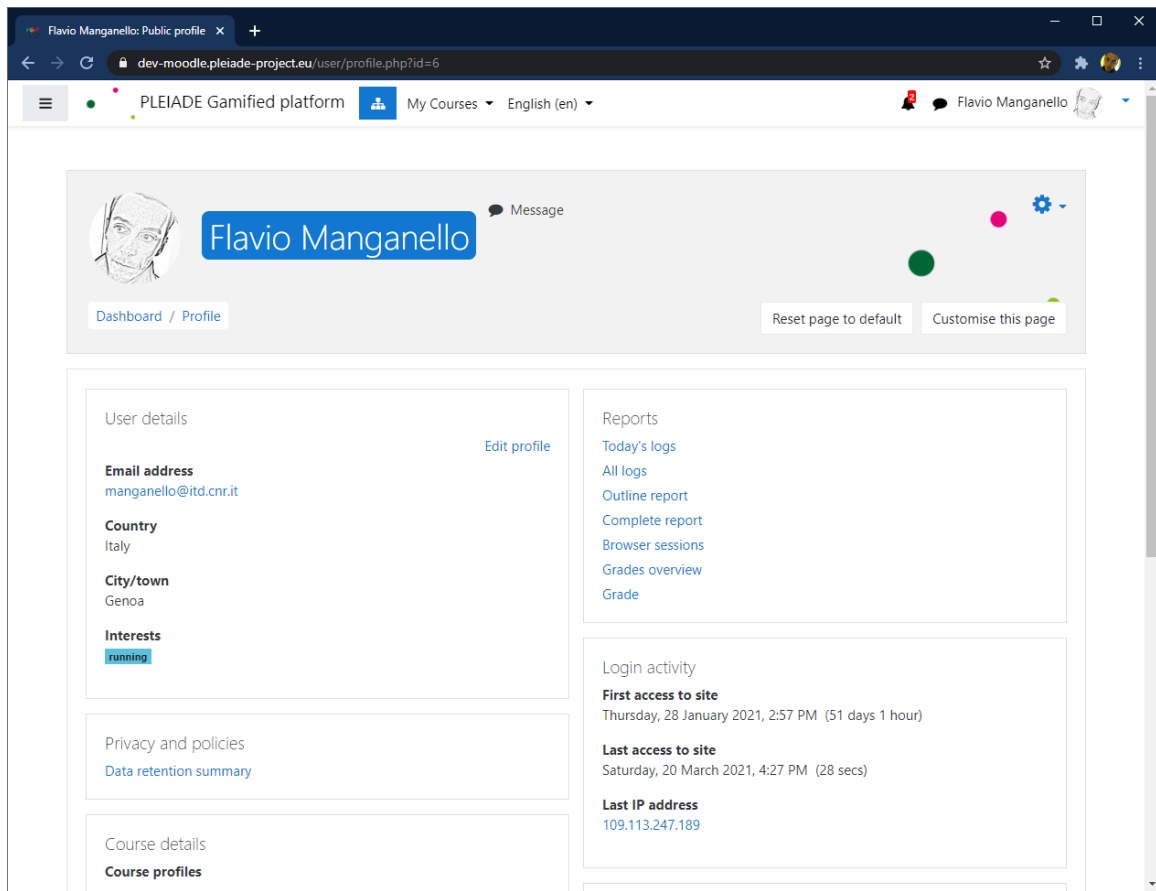


Figure 3: IO3 – Gamified Platform – User Profile

5.2.3 The course home page

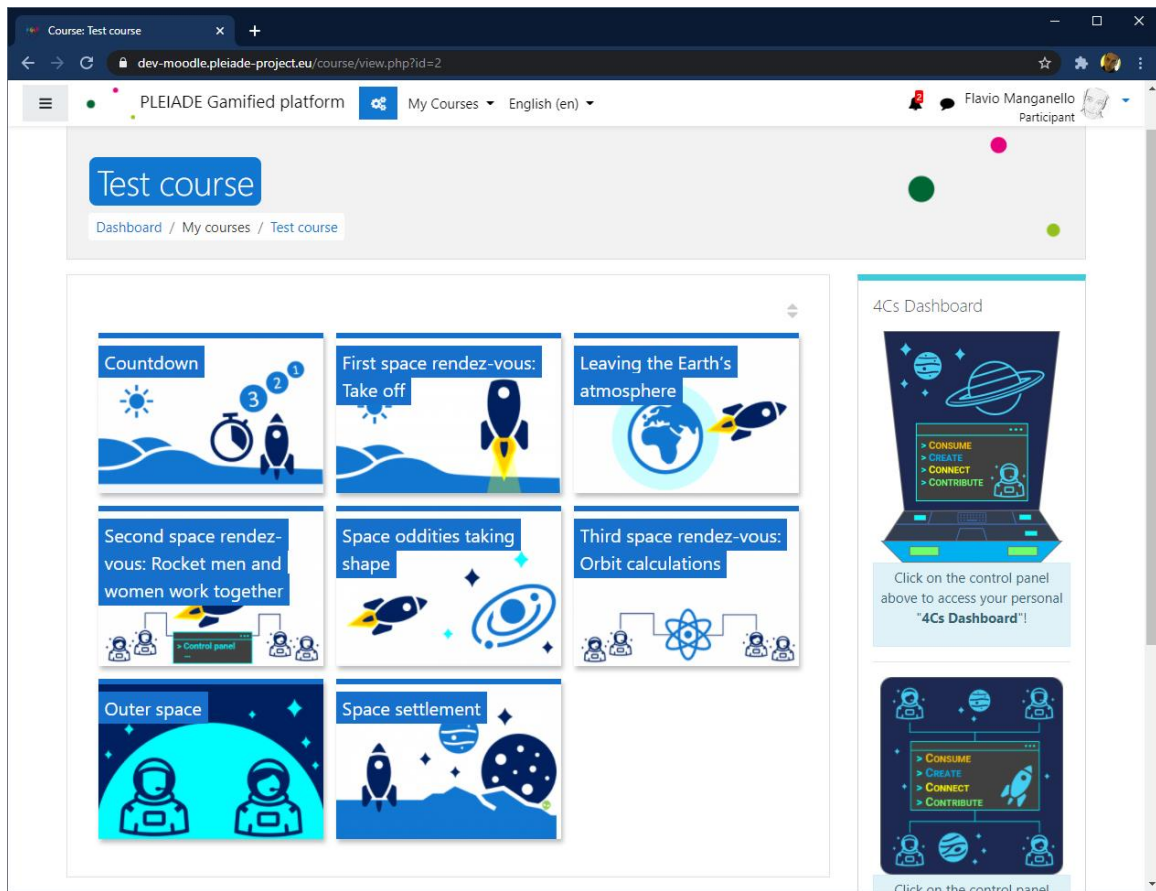


Figure 4: IO3 – Gamified Platform – Course home page

5.2.4 The course section

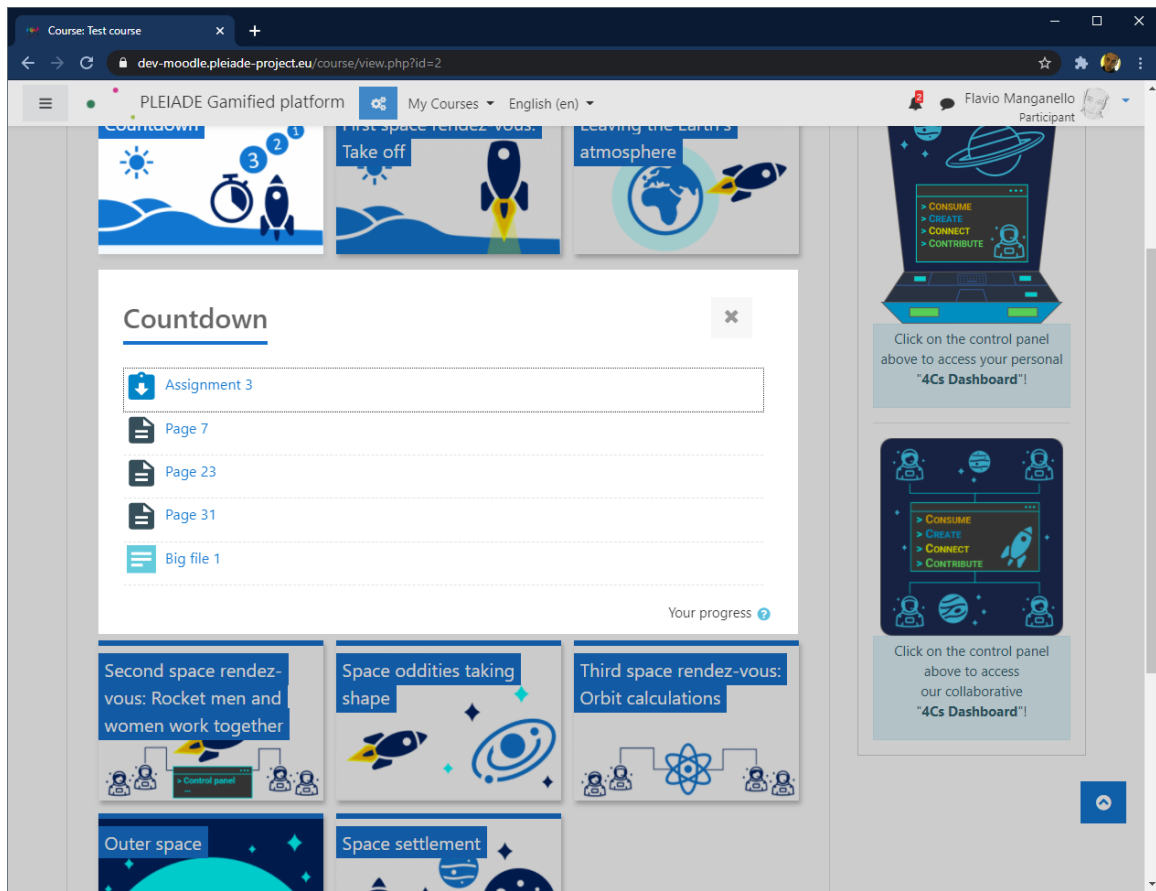


Figure 5: IO3 – Gamified Platform – Course section

5.2.5 The 4Cs Dashboard – My report

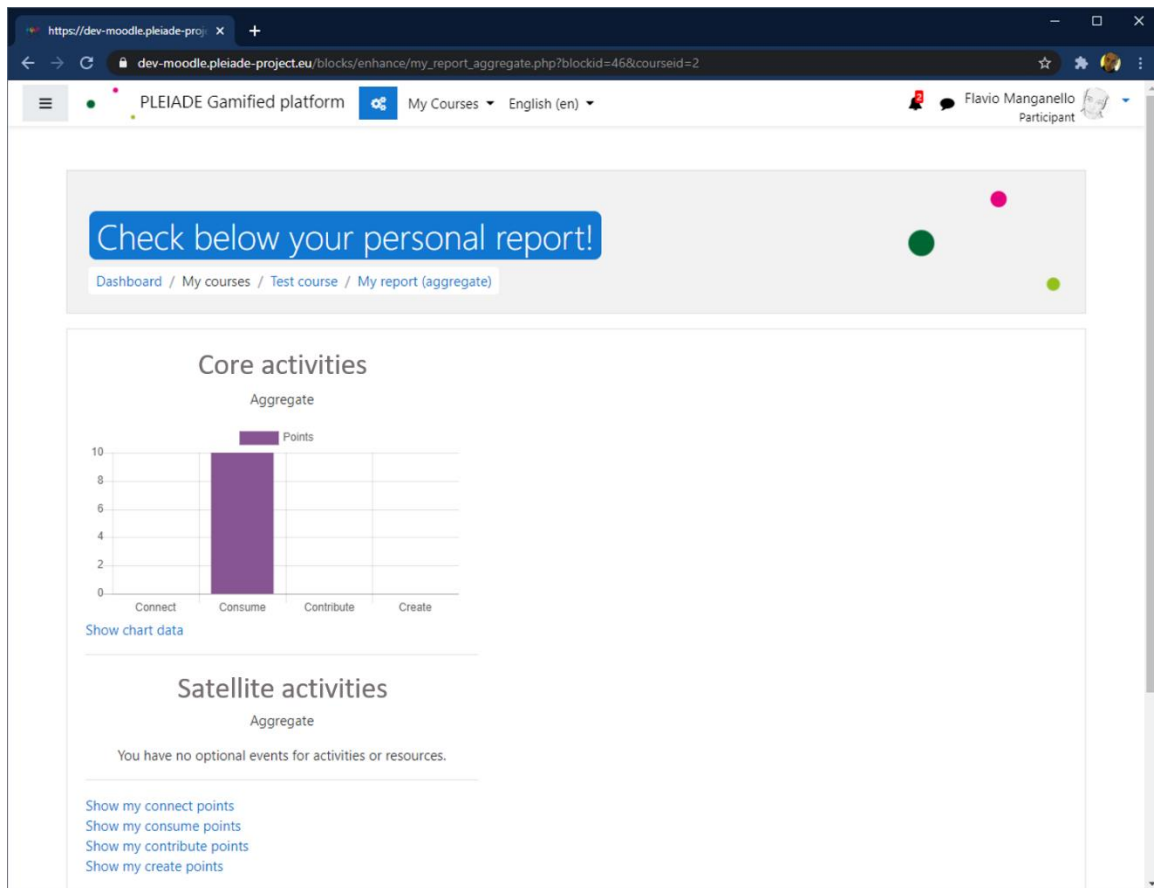


Figure 6: IO3 – Gamified Platform – 4Cs Dashboard – My report

5.3 Testing / Debugging

A preliminary release of the Gamified Platform is already available. Particularly, the development environment is going under an iterative process of “testing & debugging”, as described in the development process. This evaluation / validation process will run from 11 April 2021 to 30 April 2021 and will have as output the Gamified Platform - first / initial release - ready to be deployed in the production environment.

5.4 Deployment / maintenance

Once validated, the development environment will be deployed to the production environment and the users will be registered. This release of the Gamified Platform will host the online activities of the BTAs, starting from the begin of May 2021.

University of Sofia will take care of the maintenance services. The system will be up and running for a at least 2 years after the end of the project.

6 Tools needed to enable the functionalities

The features to be enabled had to do with the following dimensions:

- Online synchronous audio/video communication delivery.
- Gamification and motivation.
- Self-regulated learning and personalization.
- Learning Analytics.

In order to enable these dimensions, various tools have been identified, some native to Moodle, others available as additional plugins, others still specifically designed and developed for the context of the PLEIADE Project. The detail of the tools is shown in Table 9.

Table 9: Tools needed to enable the functionalities

Functionalities	Tools (URA)	Priority (URA)	Status
Online synchronous audio/video communication delivery	BBB	H	Ready
Gamification and motivation	Moodle core functionalities (e.g., digital badges, restrict access)	H	Ready <i>The level of use will be defined in accordance with IO1</i>
	Moodle “gamification” plugins (e.g., Stash, completion progress)	L	Ready <i>The level of use will be defined in accordance with IO1</i>
	Graphic customization of the space rocket metaphor	H	Ready
SRL and personalization	4Cs Dashboard (plugin)	H	Ready
	Group choice (plugin)	M	Ready
Learning Analytics	4Cs Dashboard (choice of the events to be monitored)	H	Ready <i>The level of use will be defined in</i>

			<i>accordance with IO1</i>
	Choice of the analytics model to be adopted in the course	M	Ready <i>The level of use will be defined in accordance with IO1</i>

7 Specifications and development of learning analytics functionalities

The two main functionalities implementing analytics in the Gamified Platform are:

- The 4Cs Dashboard.
- Analytics.

Particularly, with reference to specifications and development of learning analytics functionalities:

- Both functionalities - 4Cs Dashboard and Learning Analytics – will be descriptive in nature - they will tell participants what happened, based on tracking and log analysis.
- They will be monitoring only the online activities of the BTAs – i.e., what is happening into the gamified platform.

7.1 The 4Cs Dashboard

The 4Cs Dashboard (Manganello et al., 2021) aims at promoting individual and collective reflection on practice sharing. Particularly, the 4Cs Dashboard exploits analytics (i.e., Moodle events - https://docs.moodle.org/310/en/Events_list_report) to monitor SRL behaviours enacted in the online course. The 4Cs Dashboard tracks a selected, predefined set of Moodle events, and maps them based on the 4Cs framework (Milligan et al., 2014):

- “Consume” behaviours are those that entail making use of knowledge and resources created by others.
- “Create” behaviours are those concerning producing new knowledge or distilling and organising existing knowledge.
- “Connect” behaviours regard linking with others and/or providing feedback on their work.
- “Contribute” behaviours occur when new knowledge is made available to others.

For example, the ‘Post created’ event of the ‘Forum’ component is by default mapped as an action under the ‘Connect’ behaviour (see Figure 7). The way in which Moodle events are mapped against the 4Cs framework can be customized, depending on the specific learning design of the course and the related learning objectives.

Originally, the 4Cs was designed and developed by ITD-CNR and Hellenic Mediterranean University in the context of the ENhANCE Project (<https://www.enhance-fcn.eu/>). For the PLEIADE Project, the 4Cs Dashboard was highly customized - not only in the graphical representation of the user interface, but also in the events to be mapped - to specifically target the PLEIADE context and be adapted to the project’s needs.

Event Name	Event ID	Component	Role	Action
Course module viewed	\mod_folder\event\course_module_viewed	Folder	Participating	read
Some content has been posted.	\mod_forum\event\assessable_uploaded	Forum	Participating	create
Course module viewed	\mod_forum\event\course_module_viewed	Forum	Participating	read
Course searched	\mod_forum\event\course_searched	Forum	Participating	read
Discussion created	\mod_forum\event\discussion_created	Forum	Participating	create
Discussion subscription created	\mod_forum\event\discussion_subscription_created	Forum	Participating	create
Discussion subscription deleted	\mod_forum\event\discussion_subscription_deleted	Forum	Participating	delete
Discussion viewed	\mod_forum\event\discussion_viewed	Forum	Participating	read
Post created	\mod_forum\event\post_created	Forum	Participating	create
Post updated	\mod_forum\event\post_updated	Forum	Participating	update
Subscription created	\mod_forum\event\subscription_created	Forum	Participating	create
Subscription deleted	\mod_forum\event\subscription_deleted	Forum	Participating	delete
User report viewed				

Figure 7: IO3 – Gamified Platform – Event list, with the “Post created” event of the “Forum” component in evidence

7.2 Analytics

Analytics are natively embedded in Moodle: <https://docs.moodle.org/310/en/Analytics>.

Particularly, that the Moodle learning analytics system can be used to monitor engagement and participation of users at different levels, according to a variety of models such as:

- Participants at risk of dropping out.
- Participants who have not accessed the course recently.
- Participants who have not accessed the course yet.
- Upcoming activities due.

In the PLEIADE Gamified Platform context, the model to be adopted would be defined in accordance with the design of the training path, as defined in IO1 (Passarelli et al., 2021).

8 Revision of the platform configuration

This revision of the Gamified Platform (expected between M22 and M24) will be run in synergy with IO1 and the implementation of the BTAs. Particularly, this task will be based on data collected during the BTAs.

Preliminarily and as a prerequisite of this task, some aspects will be defined – such as:

- Data to be collected.
- Methods & tools to gather data.
- Target users to be involved in the process.
- Timeline.

The results of this preliminary and preparatory activity shall be ready in time to allow the closure of the task (M22-M24 of the project).

Along with the release of the final and validated version of the Gamified Platform (i.e., the *workspace*), a final version of this document (i.e., the *text file*) will also be published.

9 Conclusions

In this document, we have described the process behind the implementation of the PLEIADE Gamified Platform, from the begin of the activity to the deployment of the first release. The first version of the GAMIFIED Platform will be ready for the start of the BTAs (end of month 8 / start of month 9 of the project). Particularly, the official release date is scheduled for April 30, 2021. The Gamified Platform can be reached online at the following URL: <https://moodle.pleiade-project.eu/>.

As it was described at the beginning of this document, the main aim of the Gamified Platform is fostering motivation, participation, interaction, and peer collaboration in Teacher Professional Development (TPD) settings. Moreover, as we have explained, the Gamified Platform is intended to enable such processes mainly through the design of specific actions of gamification and self-regulated learning promotion (i.e., meta-reflection on the 4Cs framework), while adopting analytics (i.e., the 4Cs Dashboard and the Moodle analytics system) to monitor the whole processes. These peculiarities of the platform, which represent its added value, are also a challenge, because – so conceived - the platform embeds several characteristics of innovation in respect to what is currently offered in TPD.

As we have discussed in this document, with respect to the design and development of the Gamified Platform, the process was rather based on adapting and customizing an already existing open-source platform (i.e., Moodle). Particularly, we have described the process that brought us to consider Moodle as a valid candidate to act as a technological basis for the implementation of the Gamified Platform in the context of the PLEIADE Project.

In this sense, the process of requirements’ definition in our project was an activity in which three dimensions were strictly interrelated: 1) our knowledge of the Moodle platform, 2) the user needs analysis run under IO1 and 3) specific consultations with the designers of the BTAs (authors of IO1). Particularly, we adopted User Stories to describe the requirements. We started by defining a theoretical reference model (i.e., the four conceptual dimensions, see section 3), which was functional to the specific needs of the project. In particular, the following dimensions were considered: 1) tools for synchronous audio/video communication, 2) collaborative-oriented and teacher-appropriate gamification tools, 3) mechanisms and tools for promoting self-regulated learning (SRL) strategies and personalization, and 4) Learning Analytics applications to track networked knowledge sharing practices and underpin the above functions. Based on these theoretical premises, we have identified six main logical processes (i.e.: user account and basic functionalities; courses; communication and collaboration; gamification and motivation; self-regulated learning and personalization; assessment, self-assessment, and tracking) and then declined in their related functionalities.

We then have described the setup of the platform. More specifically, we have briefly documented the activities of 1) adaptation and customization, 2) testing and debugging, and 3) deployment and maintenance. After that, we have presented the tools needed to enable into the platform the following dimensions: 1) online synchronous audio/video communication delivery, 2) gamification and motivation, 3) self-regulated learning and personalization, and 4) Learning Analytics. Furthermore, we have presented the two main functionalities implementing analytics in the

Gamified Platform (i.e., The 4Cs Dashboard and the Moodle Learning Analytics system). Additionally, appendix A reports the User Manual that will be provided to participants.

Finally, we have presented the future activities expected to close this IO3, particularly the revision of the Gamified Platform (expected between M22 and M24) that will be run in synergy with IO1 and the implementation of the BTAs. The advancements will be presented after month 24 and in sync with the final project documentation. Regarding this crucial aspect of synergy between the different IOs (particularly, IO1 and IO3), we expect that all the project’s objectives could be reached assuming that communication between groups happens through the platform, which is a specific aspect of the whole picture, and of which the research group is aware.

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Appendix A – Gamified Platform User Manual

1 Introduction

Dear participant,

this guide will provide you with some pointers for using the BTAs’ platform. The learning platform will be used throughout the BTAs, and it’s important that you learn to access its many functionalities.

This document is to serve as a detailed technical guide, and we will refer you to its sections during the BTAs. If you have troubles understanding the guide, or if you have questions not addressed in this document, you can contact **Flavio Manganello** at manganello@itd.cnr.it or post a question in the helpdesk forum available within the BTAs.

Please note that, while you will be able to access the platform in multiple languages (i.e., English, Greek, Bulgarian, and Italian, see Section 11.2), this guide will use the English version as reference.

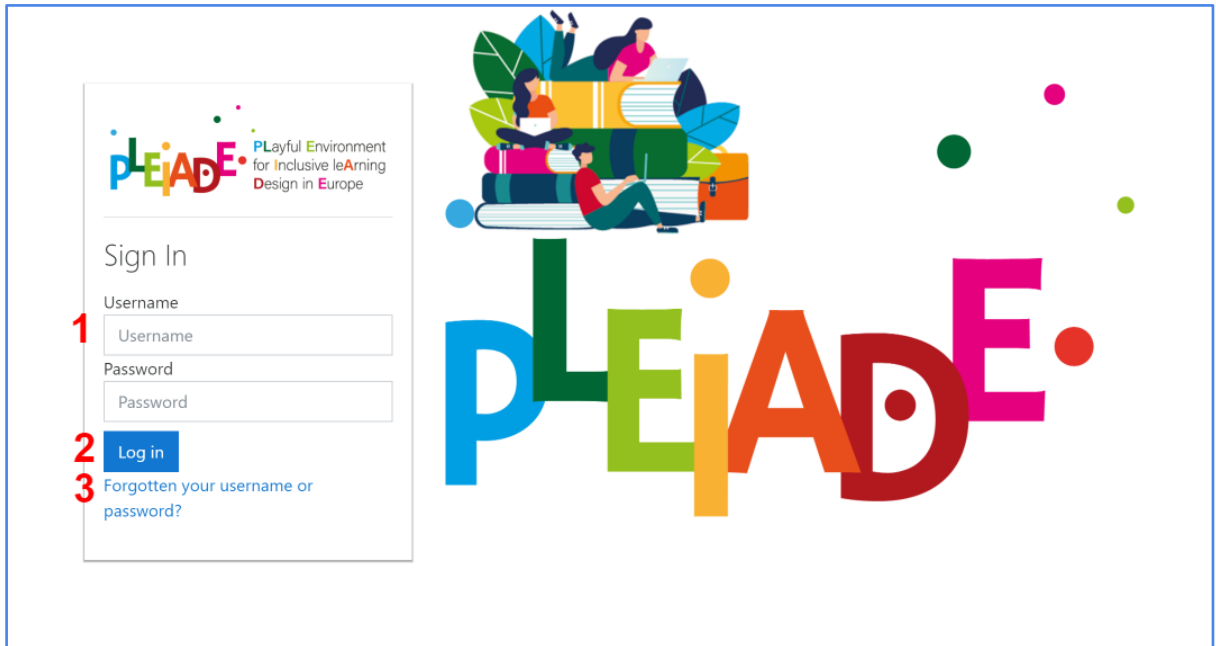
2 Login and Logout

2.1 Login to the platform

It is necessary to authenticate before accessing the platform. Click on the **Log in** link in the upper-right corner of any page to load the PLEIADE login form (below).

To access the platform:

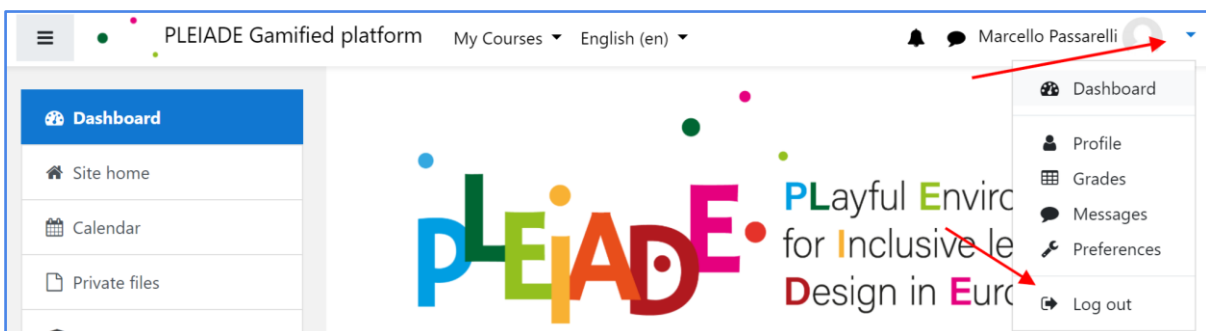
- Enter username (or email address) and password in the login fields (1).
- Click on the **Log in** button (2).



If successful, the login action automatically brings the user to their personal Dashboard (see Section 3 for a detailed overview of this tool).

To reset the assigned password, click on the **Forgotten your username or password?** link (3).

2.2 Logout



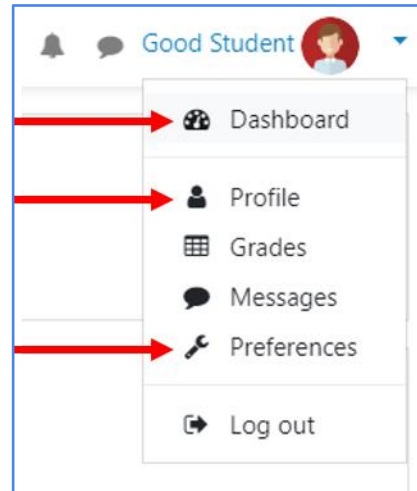
To sign off the platform:

- click on user menu in the upper-right corner of any page;
- click on the **Log out** link in the dropdown menu

3 Dashboard, User Profile and Preferences

Logged-in users can access a number of useful settings from the User menu in the upper-right corner of the page:

- **Dashboard** is a customisable page for providing links to their courses and activities within them, as unread forum posts and upcoming assignments.
- **Profile** and **Preferences** contain links to further allowing users to edit their information and preferences, view their forum/blog posts, check reports they have access to, set notification and message settings and many other actions.



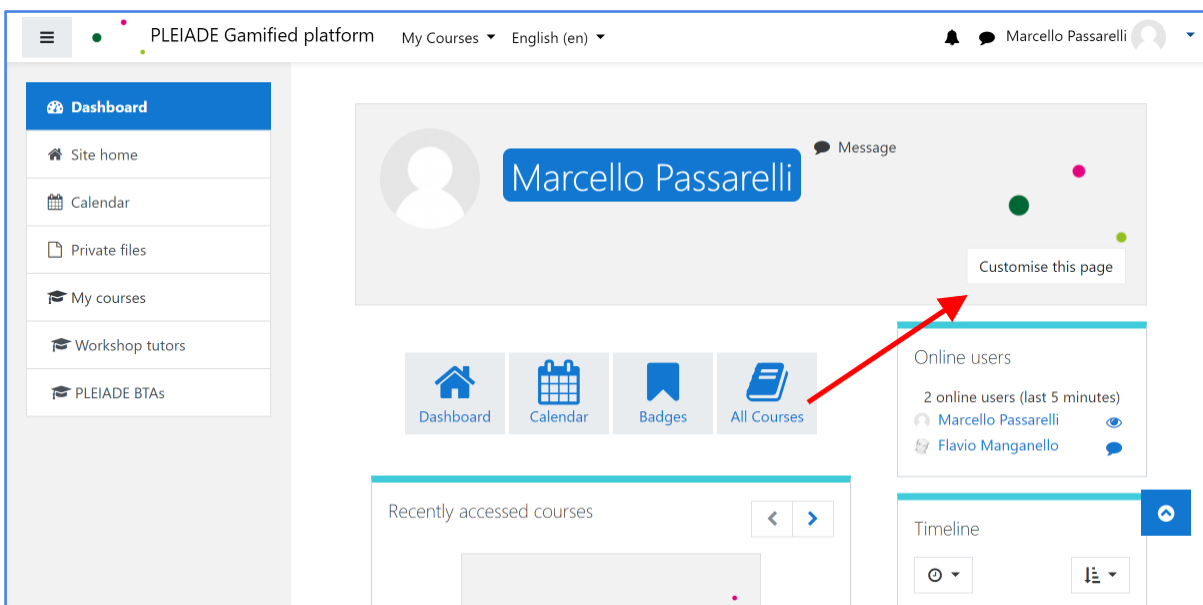
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3.1 Dashboard

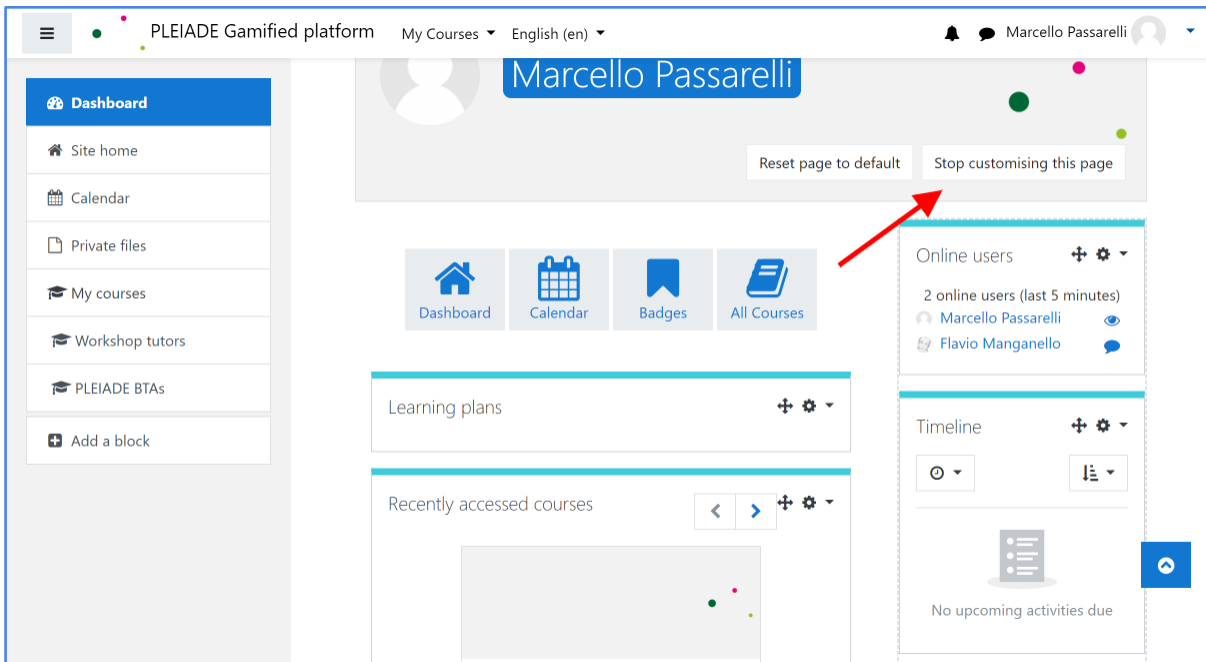
By default, Dashboard shows:

- a list of all the courses in which a user is enrolled or has an assigned role (**Course overview** block);
- an overview of the user's schedule and deadlines (**Timeline** block);
- a list of future Course events in a summarized list (**Upcoming events** block).

It is possible to personalize the Dashboard (to add, remove, move or hide blocks) by clicking on the **Customise this page** button:



To save the current status of the dashboard blocks and return to the Dashboard, click on the **Stop customizing this page** button.



To bring the Dashboard back to its default status, click on the **Reset page to Default** button.

3.2 User Profile & Preferences

The user Profile page contains, among others, the following information:

- **User details:**
 - the user’s email address;
 - a direct link to the Edit profile page;
- **Privacy and policies:**
 - a summary of the project’s data retention policies
- **Miscellaneous**
 - a list of all forum posts and discussions created by the user;
 - the user’s earned certificates;
 - the user’s blog entries.

The Preferences page gives users access to various settings they might wish to edit, like:

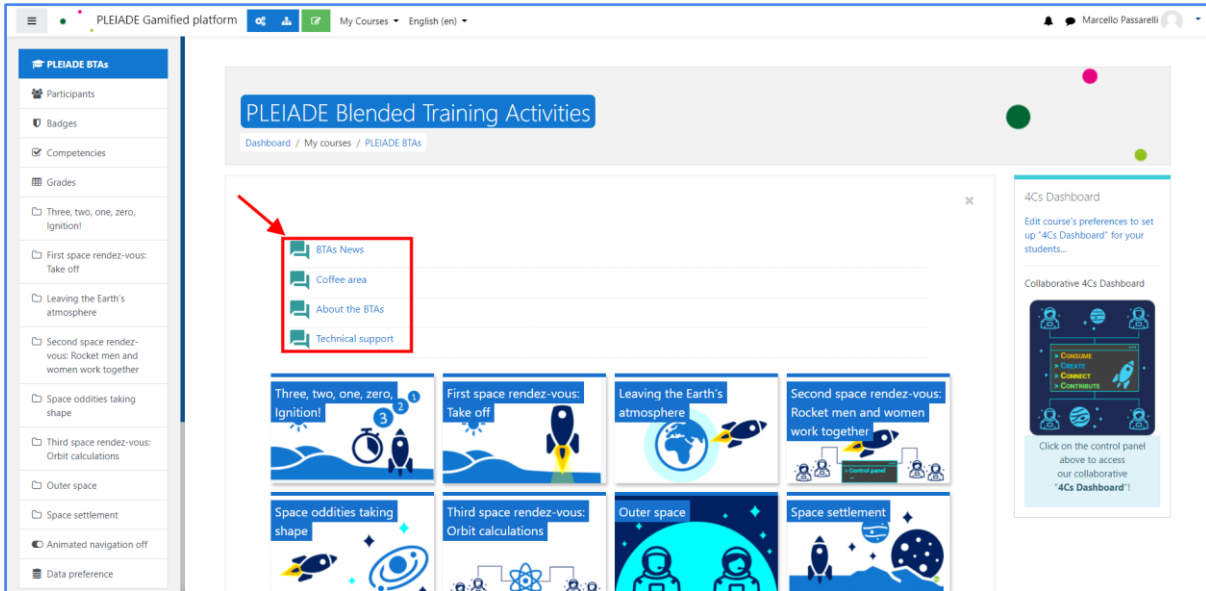
- profile information;
- currently set password;
- preferred language;
- forum preferences;
- notification settings;
- blog preferences

IMPORTANT: by default the platform server is based on the Europe/Rome time zone. It is possible to change these settings by entering the user profile (see **Section 11** of this guide [How do I change my time zone?](#)).

4 Forum

Forums allow participants to hold asynchronous discussions among them on various topics.

To access a forum in the platform, click on the Forum title in the homepage of the course.



Note that the platform will have four ‘general’ forums, which will be used throughout the course (see below). These are:

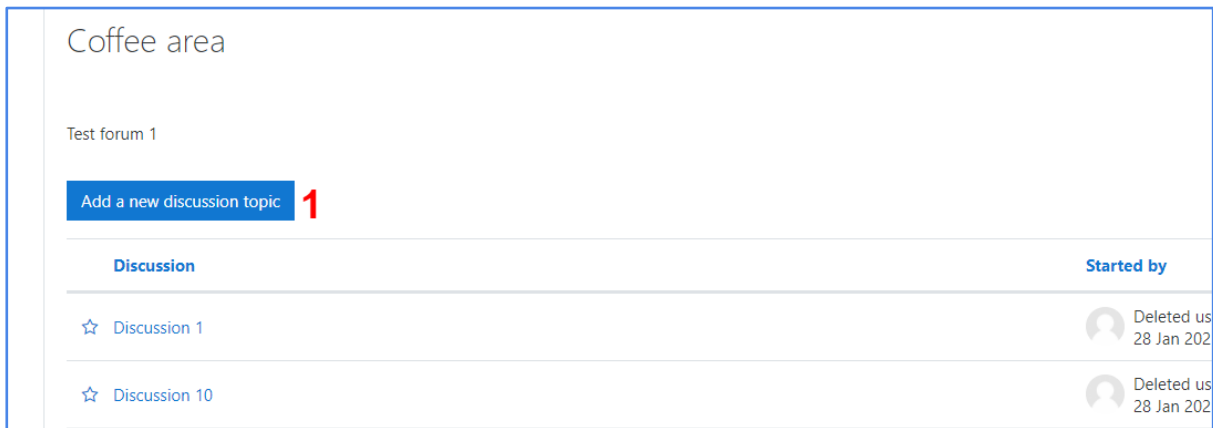
- the BTA news forum, which you should regularly check to keep updated on important course-related information;
- the Technical support forum, which is the place to ask for help regarding issues with the platform, the webinar platform, or other technical tools employed during the course;
- the ‘About the BTAs’ forum, which is a space you can use to reflect with your colleagues about the learning process;
- the Coffee Area, which is a space for informal discussion, including discussion on topics not related to the BTAs.

In addition to these, you will find more forums accessible from each specific course module, which will be the place where you’ll do the main module activities.

When you click on a forum, previously started discussions are listed and available to all users. Clicking the button “add a new discussion topic” (1, below) will let you post a new discussion thread (see Section 4.1). Clicking on a discussion title (2, below) will open it and allow you to reply to it.

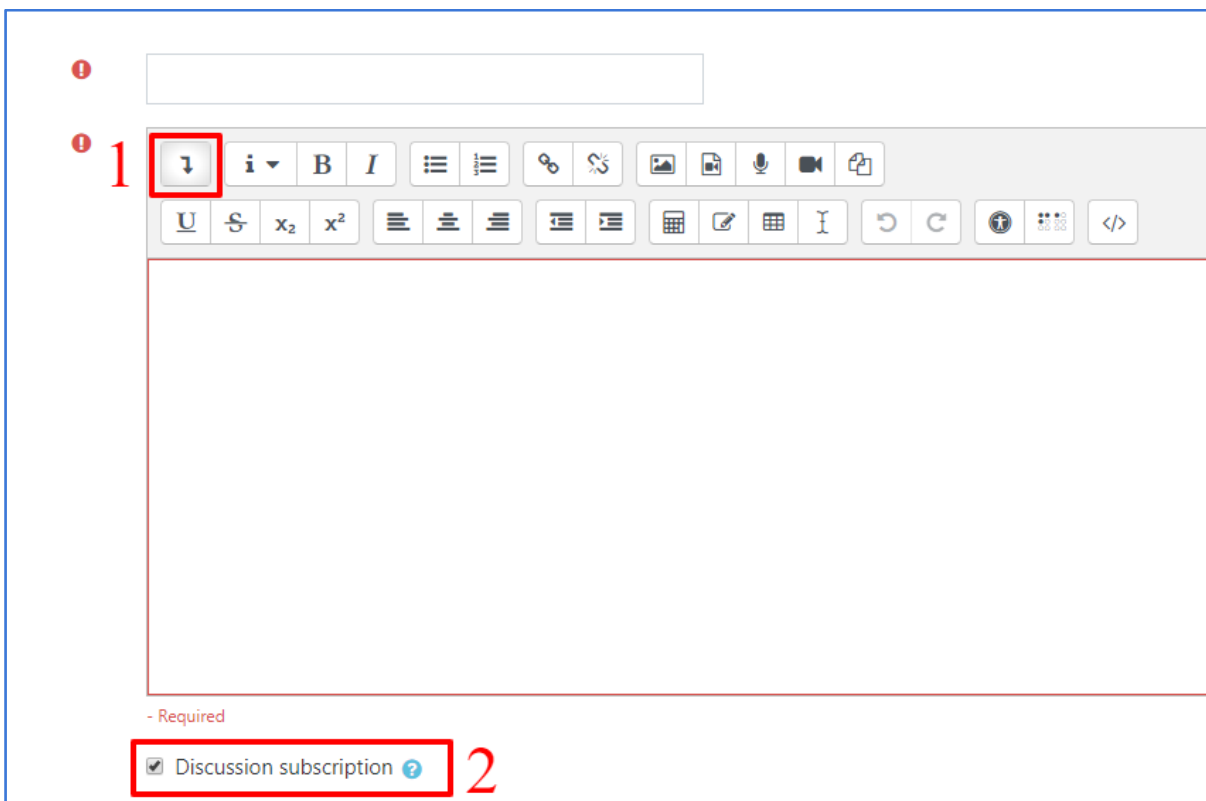
Is it also possible to subscribe to discussions (i.e. be notified of new posts) by clicking the envelope beside them (4, below). You can also subscribe to the whole forum by clicking on the gear icon (3,

below) and selecting "Subscribe to this forum". You will then be notified whenever a new discussion or reply is added to the forum.



4.1 Start a new forum discussion

To start a new thread (1), click on the **Add a new discussion topic** button (1 in the image above) to access the New Discussion Topic panel.



Both a subject and a message are required. Try to keep the subject short, but informative on the message contents. Make sure that your discussion is in-topic for the forum you are posting it in.

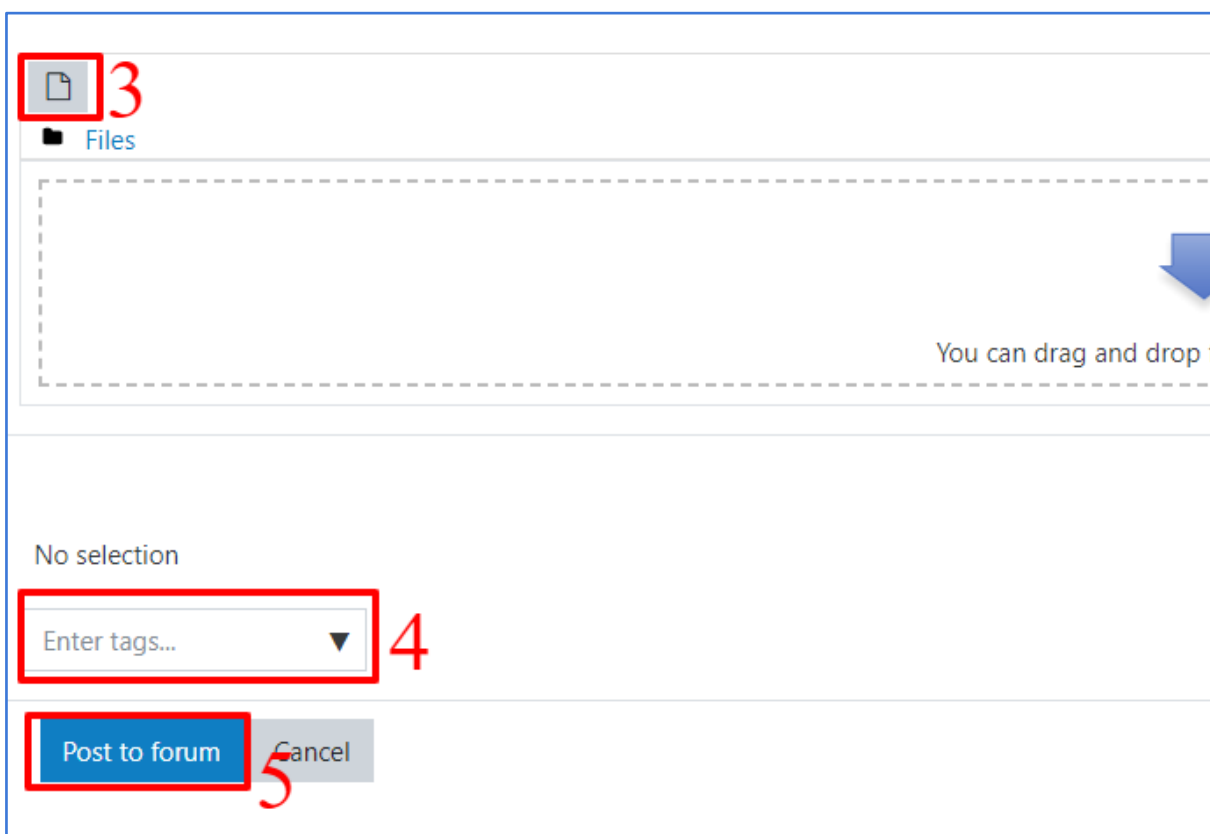
The message text field has some simple formatting options for changing font style and size, and add lists, links or multimedia files. You can access more advanced formatting options by clicking the downward arrow (see 1, above).

By clicking on the ‘advanced’ button, just under the text editor, you’ll be able to access additional options.

For example, it’s possible to subscribe to your post (see 2, above). If you do, you will be notified whenever someone posts a reply to your discussion.

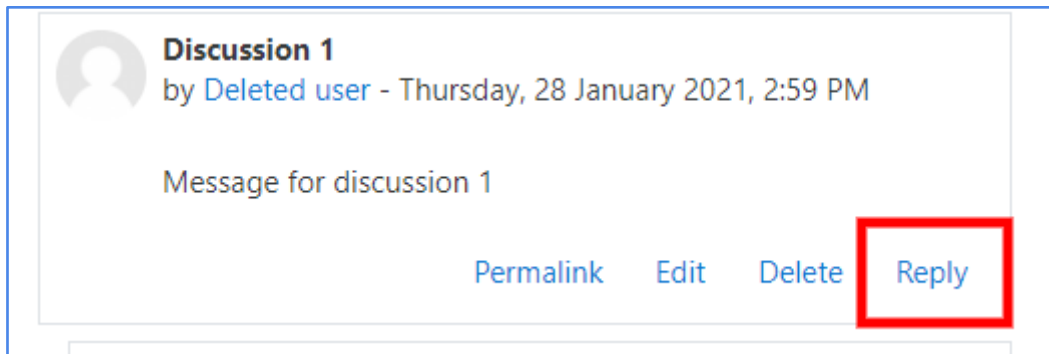
You can also add attachments to your discussion by opening the file picker (3, below) or by dragging and dropping files to the area just beneath it. Using the file picker, you can upload a file from your device, retrieve a file using an URL, or select one file you already uploaded on the platform. You can additionally add tags to your post (4, below) to make it easier for other participants to find your discussion. Both attachments and tags are optional and accessible only after clicking the ‘advanced’ button.

When you are ready to post your discussion, click the button labeled “Post to forum” (5, below). Your post will now be visible to all other participants.



4.2 View and reply to discussions

When you open a discussion, you can add a reply to it (see below).



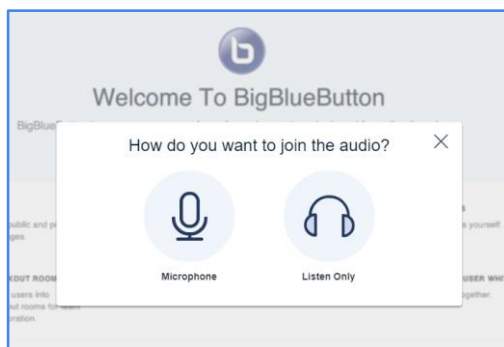
The form for adding a discussion reply is identical to the one for adding a discussion post. However, your reply won't be shown on the list of discussions, and will only be visible when a participant views the discussion you are replying to.

5 Webinar

Webinars will be delivered directly from inside the platform through a dedicated plugin.

To access a webinar in the platform, click on the Webinar title in the homepage of the course.

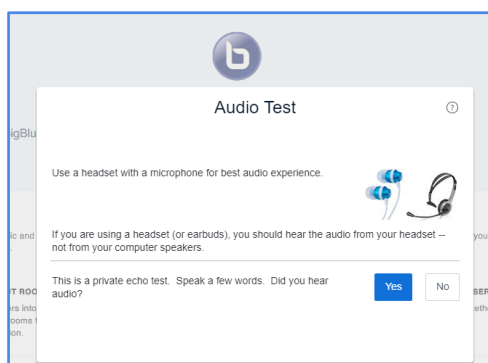
Before accessing the Webinar room it is possible to choose how to join the audio:



To be able to actively speak during the Webinar, click on the **Microphone** icon.

To only enter as a listener, click on the **Listen only** headset icon.

If you chose to activate your microphone, an audio test will be offered:

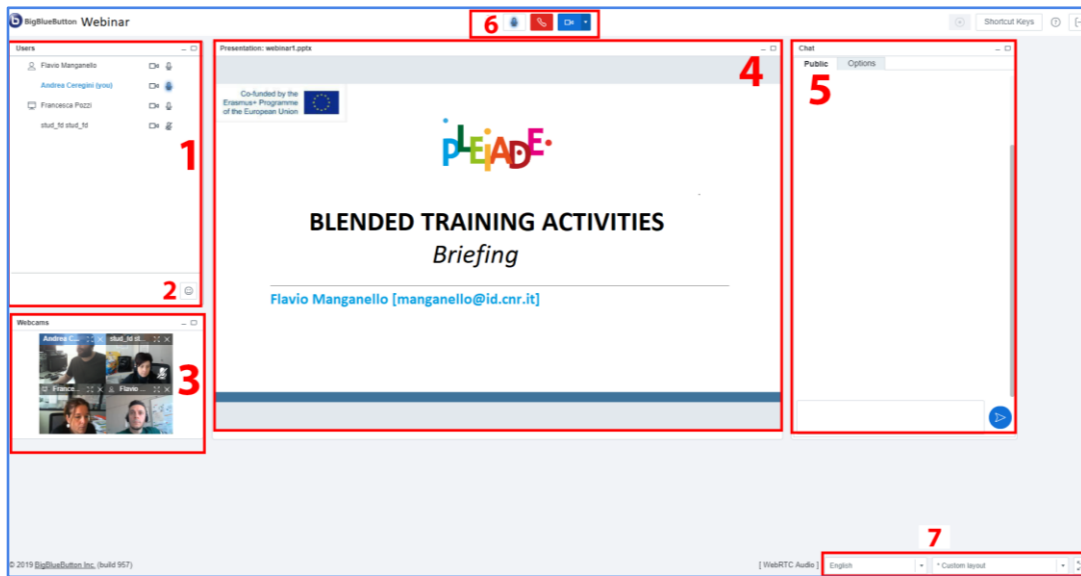


To test your audio connection, speak into the microphone: if you hear your voice back then everything has been set-up correctly.

The main default screen of a platform webinar is composed of three main parts:

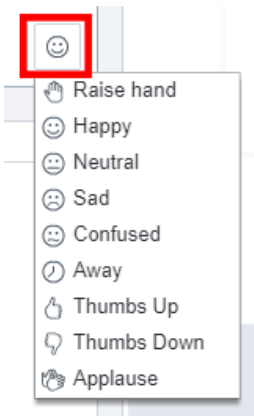
- A list of connected participants (on the *left* in the image below);
- The presentation screen (*center*);

- A public chat (*right*).

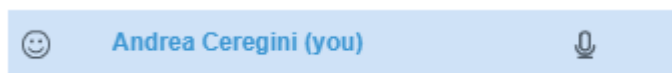


The **Users** panel (1 in the image above) lists all the Webinar participants’ names along with a series of icons useful to understand what action each user is able to do, and their roles:

	Moderator (can activate and deactivate audio & video for other users, select a presenter among the participants, make other users moderators...)
	Presenter (has full access to the presentation screen; only one participant can be presenter at a time)
	User with Video and Audio activated. All currently active video streams are visible in the Webcams section (3 in the image above)



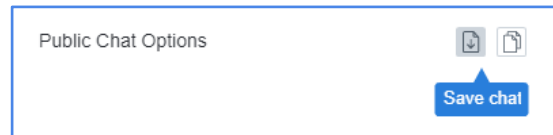
Participants can use the Emoji Tool (2 in the image above, and on the left) to update their status icon. This functionality allows users with deactivated microphones to make their voices heard by selecting one of the available icons, that will appear on the left of their name:



Particularly important is the **Raise hand** icon, that can be used to ask a moderator for the right to speak.

The **Presentation** panel is the main section of the Webinar module. All the documents and slides shared by the **Presenter** will be shown here.

The **Chat** panel (5) allows all the participants to share thoughts, comments and questions about current presentation.

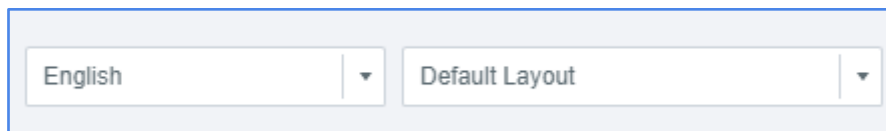


the

It is possible to download the content of the chat as a .txt document. To do this, click on the **Options** tab in the Chat panel and then click on the **Save chat** button in the Chat Options.

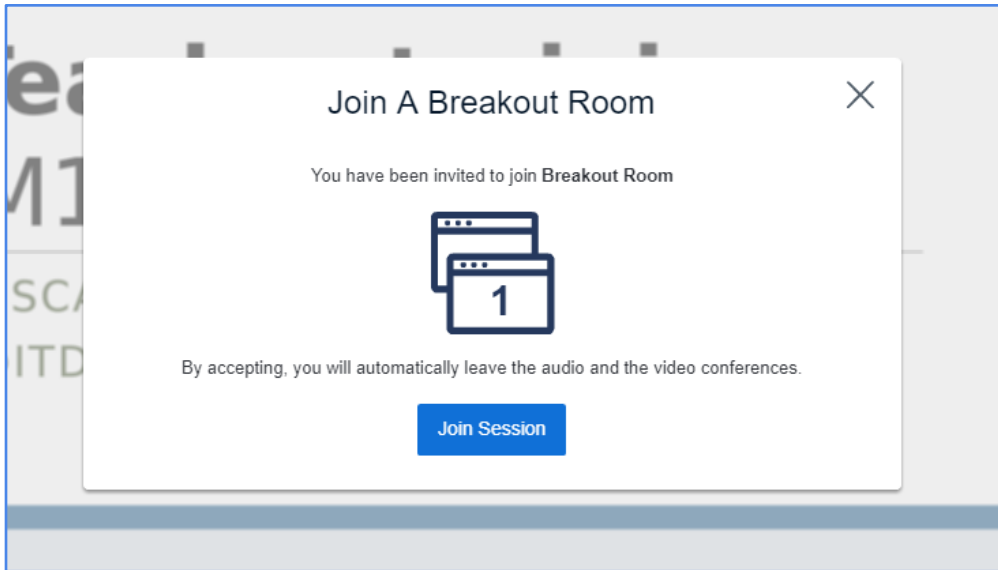
At the top middle of the screen (6) are grouped the actions for activate and deactivate microphone, audio and webcam.

The dropdown lists in the bottom-right corner of the window (7) allow the user to select the interface language for the webinar module and the preferred graphic layout. For best enjoying the Webinar, it is advised to select **English** and **Default Layout**:



5.1 Breakout rooms

During a webinar activity the moderator may decide to split the participants into separate groups called breakout rooms. To accept an invitation to join a breakout room, click on the blue **Join Session** button in the popup alert that will appear on screen:



When requested, perform the audio test to enter the room, that will open on a separate tab:



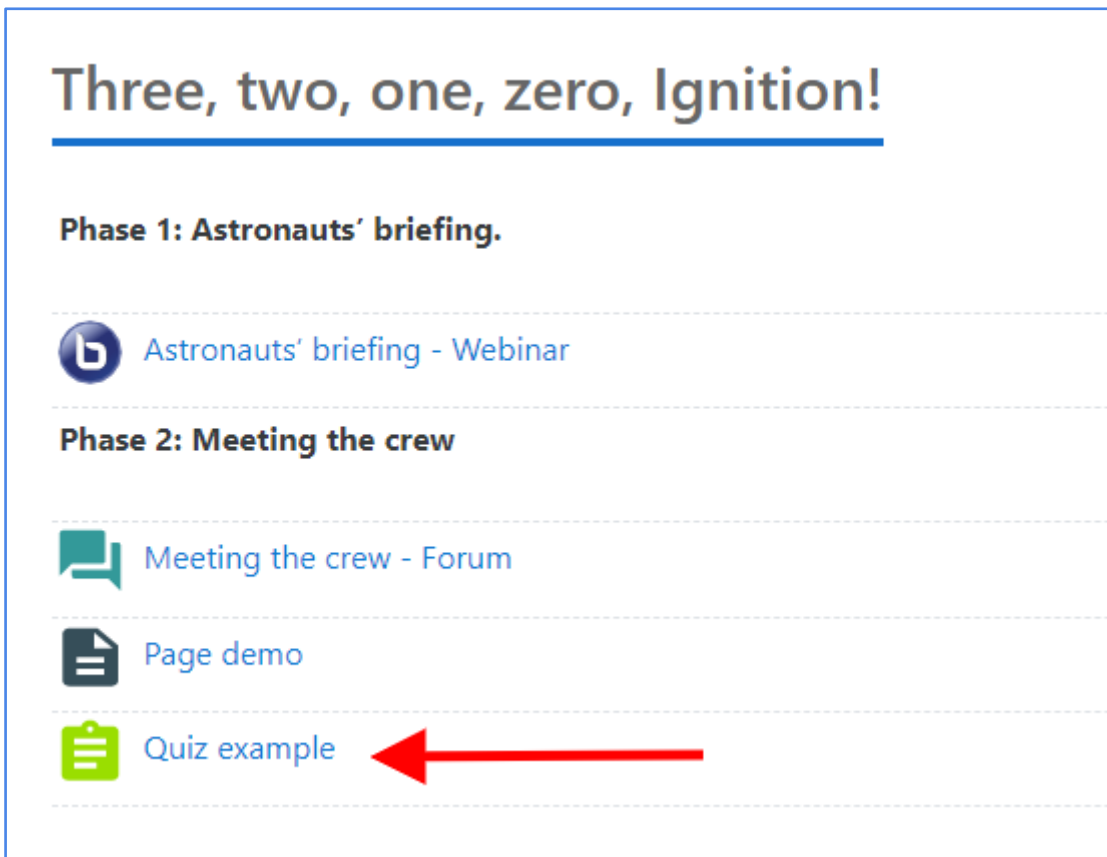
Breakout rooms work exactly as the main instance of the webinar, with the exceptions being:

- documents shared in the Presentation panel will only be visible to members of the group
- chat messages will be read only by members of the group

6 Quiz

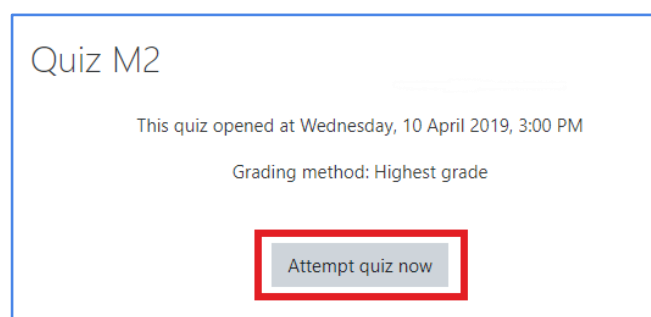
The Quiz activity module allows the teacher to design and build quizzes consisting of a large variety of Question types, including multiple choice, true-false and short answers.

To access a quiz on the platform, click on the Quiz title in the homepage of the course.



The screenshot shows a course homepage with the following content:

- Three, two, one, zero, Ignition!** (Section title)
- Phase 1: Astronauts' briefing.** (Section title)
- Astronauts' briefing - Webinar** (Activity link with a blue 'b' icon)
- Phase 2: Meeting the crew** (Section title)
- Meeting the crew - Forum** (Activity link with a speech bubble icon)
- Page demo** (Activity link with a document icon)
- Quiz example** (Activity link with a green list icon, highlighted by a red arrow)



The screenshot shows a quiz page with the following content:

- Quiz M2** (Quiz title)
- This quiz opened at Wednesday, 10 April 2019, 3:00 PM
- Grading method: Highest grade
- Attempt quiz now** (Button, highlighted by a red box)

To start taking the quiz, click on the **Attempt this quiz now** button.

Once all questions have been answered, click on the blue **Finish attempt** button. This will present the user a summary of the current attempt, as shown in the image below:

Quiz M2

Summary of attempt

Question	Status
1	Answer saved
2	Answer saved
3	Answer saved

[Return to attempt](#)

[Submit all and finish](#)

To edit the answers click on the **Return to Attempt** button.

To confirm your answers and submit your quiz, click on the **Submit all and finish** button (a confirmation prompt will be displayed).

The next page shows a detailed summary of the results, including the final mark and corrections to wrong answers:

Started on	Tuesday, 16 April 2019, 3:51 PM
State	Finished
Completed on	Tuesday, 16 April 2019, 4:27 PM
Time taken	36 mins 3 secs
Marks	2.00/3.00
Grade	6.67 out of 10.00 (67%)

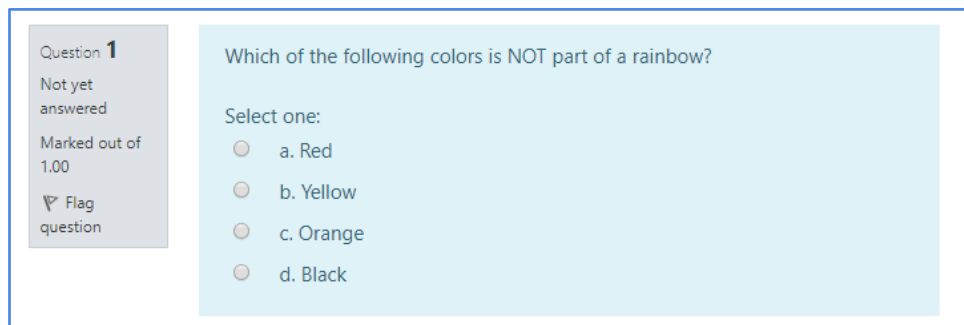
Question 1 Correct Mark 1.00 out of 1.00 Flag question	<p>Which of the following colors is NOT part of a rainbow?</p> <p>Select one:</p> <ul style="list-style-type: none"><input type="radio"/> a. Red<input type="radio"/> b. Yellow<input type="radio"/> c. Orange<input checked="" type="radio"/> d. Black ✓ <p>Your answer is correct. The correct answer is: Black</p>
Question 2 Correct Mark 1.00 out of 1.00 Flag question	<p>Earth is flat: true or false?</p> <p>Select one:</p> <ul style="list-style-type: none"><input type="radio"/> True<input checked="" type="radio"/> False ✓ <p>Correct! The correct answer is 'False'.</p>
Question 3 Incorrect Mark 0.00 out of 1.00 Flag question	<p>This song by Bing Crosby is the world's best-selling single with estimated sales in excess of 50 million copies worldwide. Its title is...</p> <p>Answer: <input type="text" value="White Xmas"/> ✘</p> <p>The correct answer is: White Christmas</p>

The platform includes different types of questions:

- Multiple Choice
- True or False
- Short answer

Multiple Choice (only one correct answer)

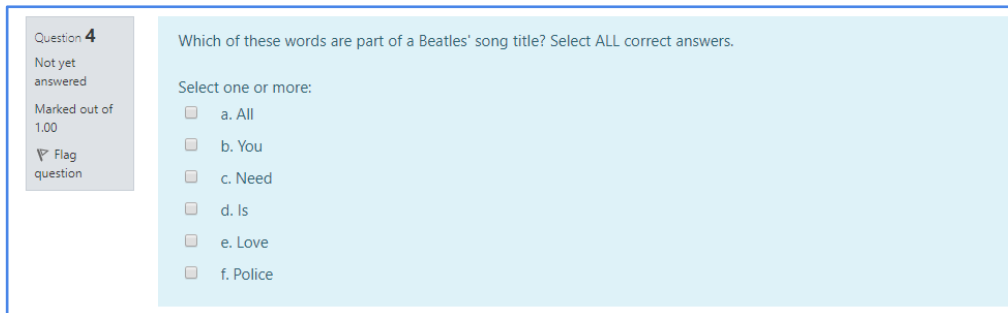
These questions allow one and only one answer to be chosen by selecting the radio button next to the answers.



The screenshot shows a question card with a grey sidebar on the left and a light blue main area. The sidebar contains the text: "Question 1", "Not yet answered", "Marked out of 1.00", and a "Flag question" button. The main area contains the question: "Which of the following colors is NOT part of a rainbow?" followed by "Select one:" and four radio button options: "a. Red", "b. Yellow", "c. Orange", and "d. Black".

Multiple Choice (more than one correct answers)

The only way to get this right is to pick ALL the correct answers, by clicking on the check boxes next to them.



The screenshot shows a question card with a grey sidebar on the left and a light blue main area. The sidebar contains the text: "Question 4", "Not yet answered", "Marked out of 1.00", and a "Flag question" button. The main area contains the question: "Which of these words are part of a Beatles' song title? Select ALL correct answers." followed by "Select one or more:" and six checkbox options: "a. All", "b. You", "c. Need", "d. Is", "e. Love", and "f. Police".

True or False

A participant is given only two choices for an answer in this kind of question: True or False.

Question **2**
Not yet answered
Marked out of 1.00
Flag question

Earth is flat: true or false?

Select one:

True

False

Short Answer

To reply to a Short Answer question, type a word or a brief phrase in response to a question in the provided text field. Answers must match exactly the expected solution and are NOT case sensitive (i.e. **WHITE CHRISTMAS** and **white christmas** are both correct answers to the example below because the expected solution set by the tutor is “White Christmas”, while **White Xmas** is not a valid answer).

Question **3**
Not yet answered
Marked out of 1.00
Flag question

This song by Bing Crosby is the world's best-selling single with estimated sales in excess of 50 million copies worldwide. Its title is...

Answer:

7 Assignment

The assignment activity provides a space into which participants can submit work for grading and feedback. In an assignment, you may be asked to submit one or several files and/or to type text essays.

Assignments can be individual (and each participant will have to submit them for the activity to be marked as completed) or group assignments (only one member of the group will have to perform the submission, and this will mark the activity as completed for all group members). Assignments can have deadlines and cut off dates.

7.1 Submitting an assignment

To begin submission of an assignment, go to the assignment page and click “add submission”.

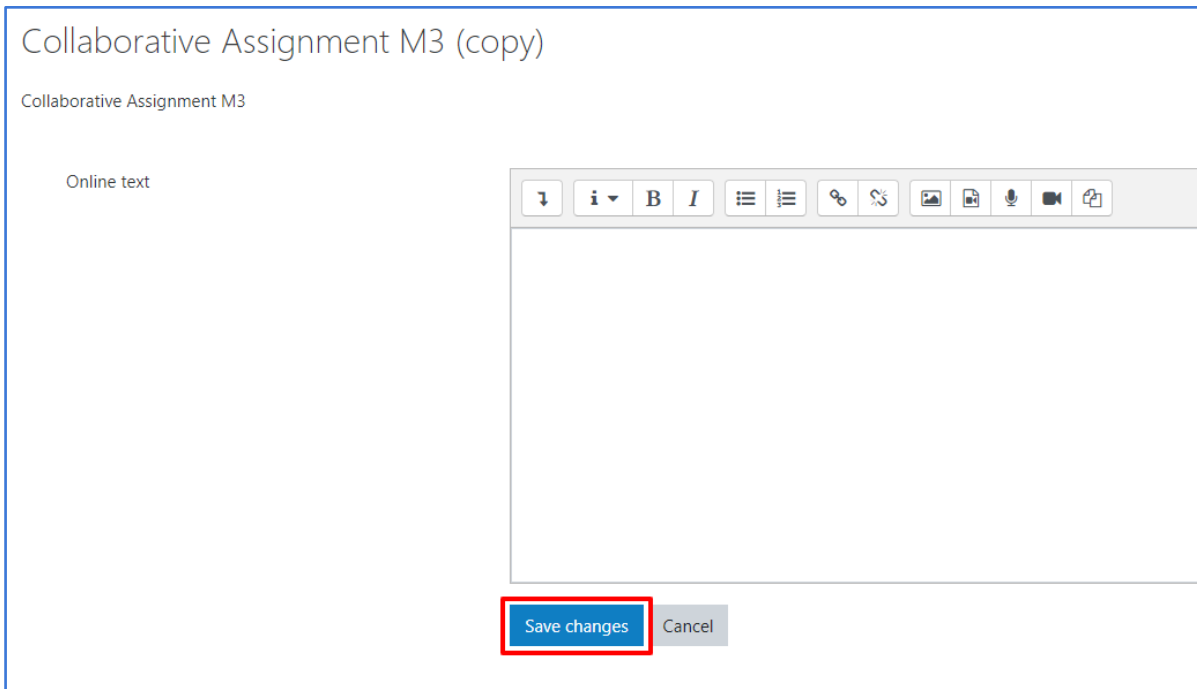
Submission status	
Group	Default group
Submission status	Nothing has been submitted for this assignment
Grading status	Not graded
Last modified	-
Submission comments	
Add submission	
You have not made a submission yet	

Depending on the type of assignment, you will be asked to either upload one or more file(s), or to type some text in an open field. The picture below shows a text assignment example. When you finish working on your assignment, click “Save changes”.

Collaborative Assignment M3 (copy)

Collaborative Assignment M3

Online text



Save changes Cancel

After saving your draft, you will be shown a summary of your draft. You can still edit your draft, by clicking “edit submission”. **Your work has not yet been submitted!**



Submission status

Group	Default group
Submission status	Draft (not submitted)
Grading status	Not graded
Last modified	Friday, 19 April 2019, 2:47 PM
Submission comments	
Online text	<p>+ (447 words)</p> <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Pellentesque ipsum nibh, vulputate in faucibus vel, hendrerit a dolor. Ut ...</p> <p>Export to portfolio</p>

Edit submission

To submit your work, click instead "Submit assignment".

Submission status

Attempt number	This is attempt 1.
Submission status	Draft (not submitted)
Grading status	Not graded
Last modified	Friday, 19 April 2019, 4:02 PM
File submissions	 Assignment (1).png + 19 April 2019, 4:02 PM Export to portfolio
Submission comments	 Comments (0)

[Edit submission](#)

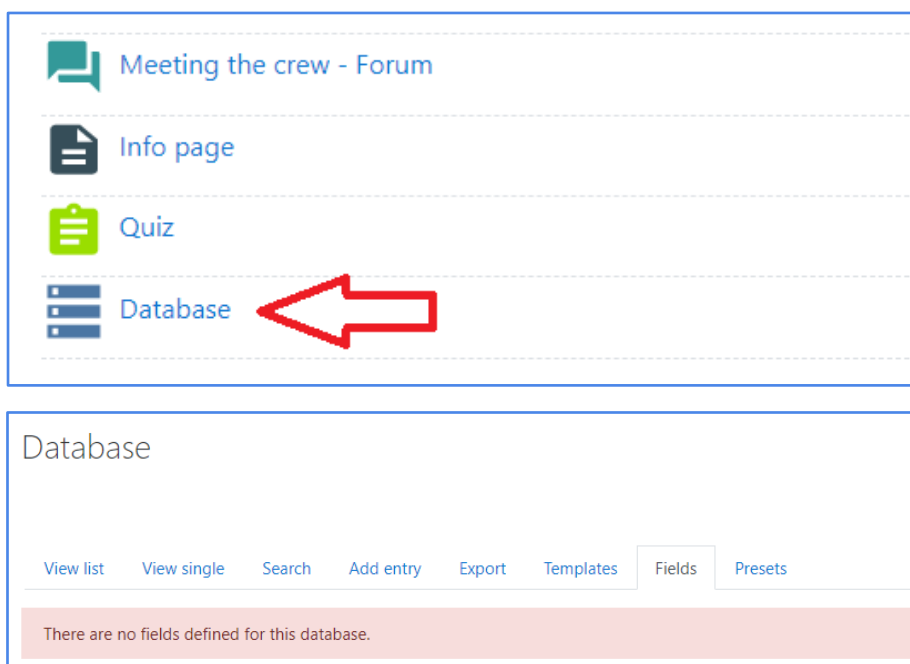
You can still make changes to your submission

[Submit assignment](#)

8 Database

The database module allows the participants to build, display and search a bank of record entries about a given topic. The format and structure of these entries can include images, files, URLs, numbers and text amongst other things.

To access a database in the platform, click on the Database title in the homepage of the course.



It is possible to use the provided links and tools to perform a number of actions:

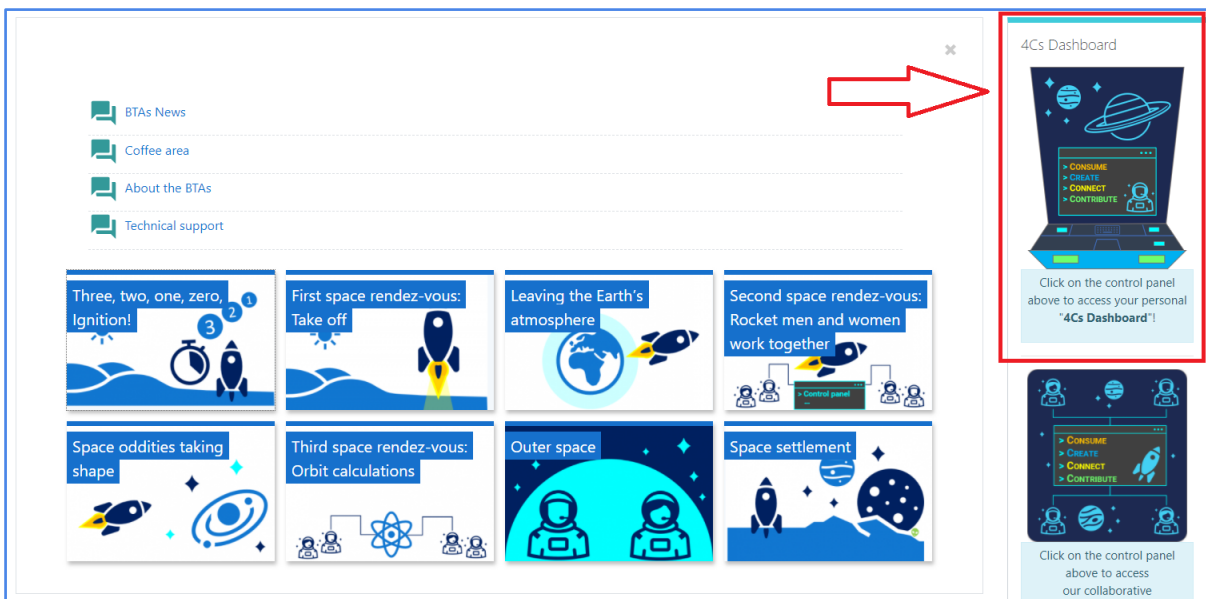
- **View list:** view several items at a time;
- **View single:** view only one item at a time;
- **Search:** search the entries by keyword or contributor;
- **Add entry:** add an item to the database (see image below)

9 4Cs Dashboard

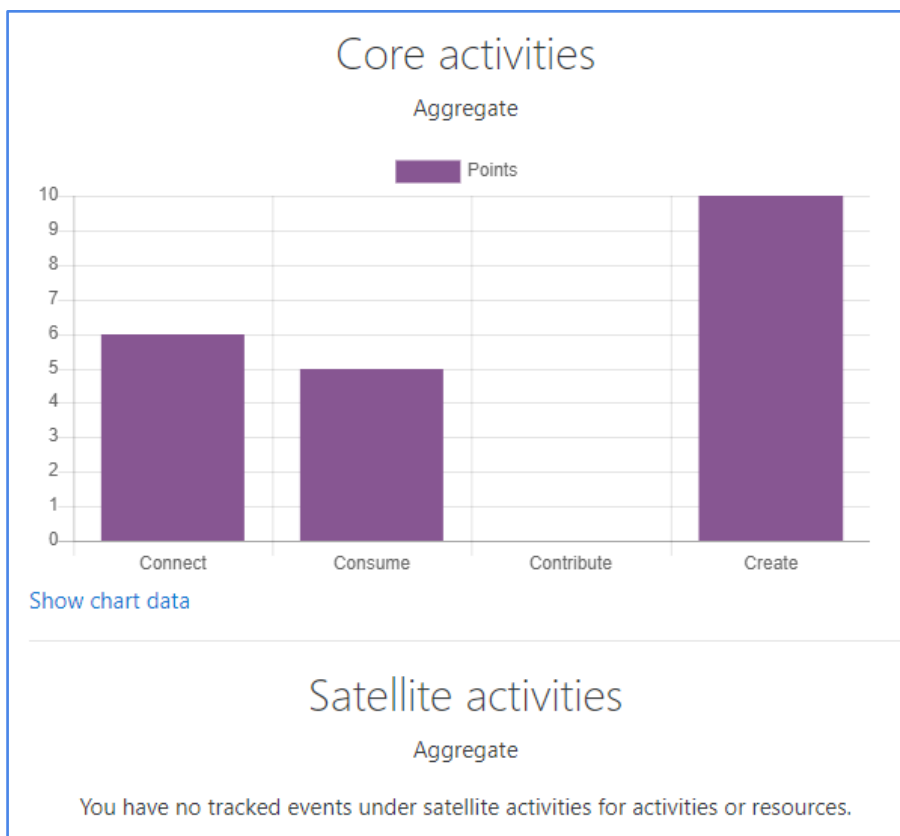
Starting from the second intensive event (Module 4), we will refer to the 4Cs framework for conceptualizing the learning process. In the 4C framework, learners’ actions are divided in 4 categories: *creating, connecting, contributing, and consuming*.

The definition and application of these categories will be a fundamental part of the course, and will not be explained here. However, do note that your actions in the platform will be tracked and classified according to the framework. Therefore, during the course you will be provided, at all times, a measure of how much you are creating, connecting, contributing, and consuming. Additionally, you will have a measure of how much *the whole cohort of participants* is acting according to the 4C framework.

To access your *personal* 4C dashboard, click on the “4Cs Dashboard” section in the platform right sidebar.

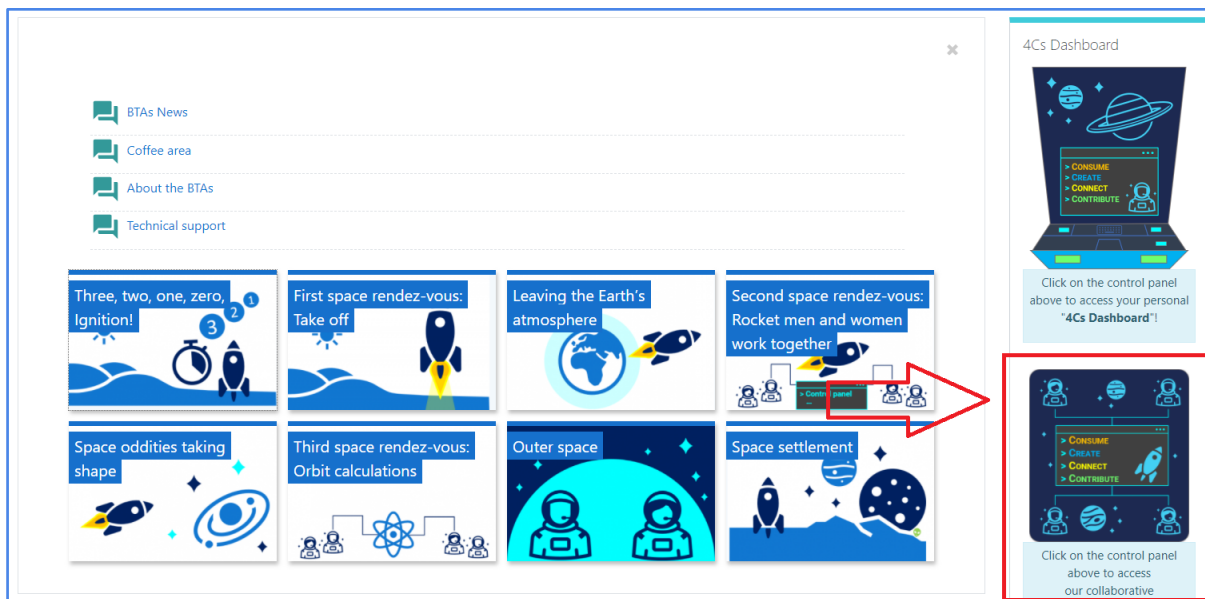


Clicking on the section will open the report page, which will provide you an aggregated visualization of your performance in each category of the 4Cs, including all course activities (i.e. both core and satellite events).

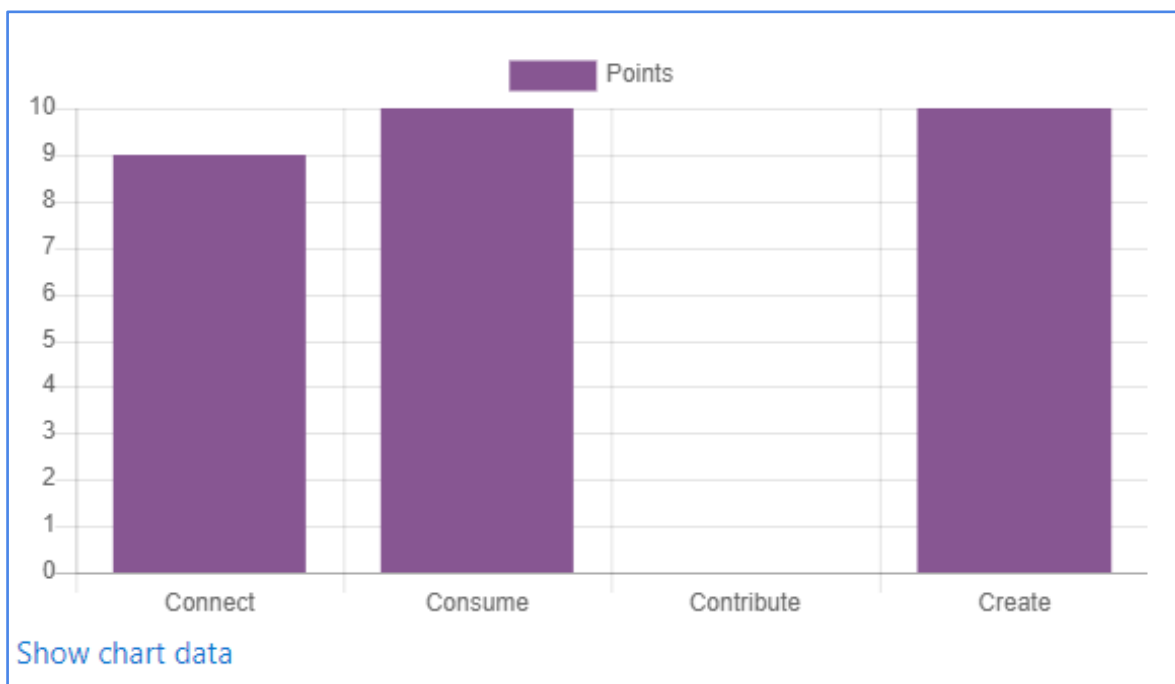


In this graph, the size of each bar in the chart represents how much you enacted each category of action during your course experience thus far. Remember that certain behaviours (e.g., posting on a forum) will naturally require less effort than others (e.g., creating and sharing a new learning material). All actions are weighted according to the effort they require. Therefore, it may require multiple forum posts to match the score gained by creating and sharing a single material.

To access the collective 4Cs summary for the whole cohort, click on the “Collaborative 4Cs dashboard” in the Sidebar.



In this dashboard, similarly to your personal one, you can access a summary of the classroom score for each category and a visualization of the relative enactment of each category of action.

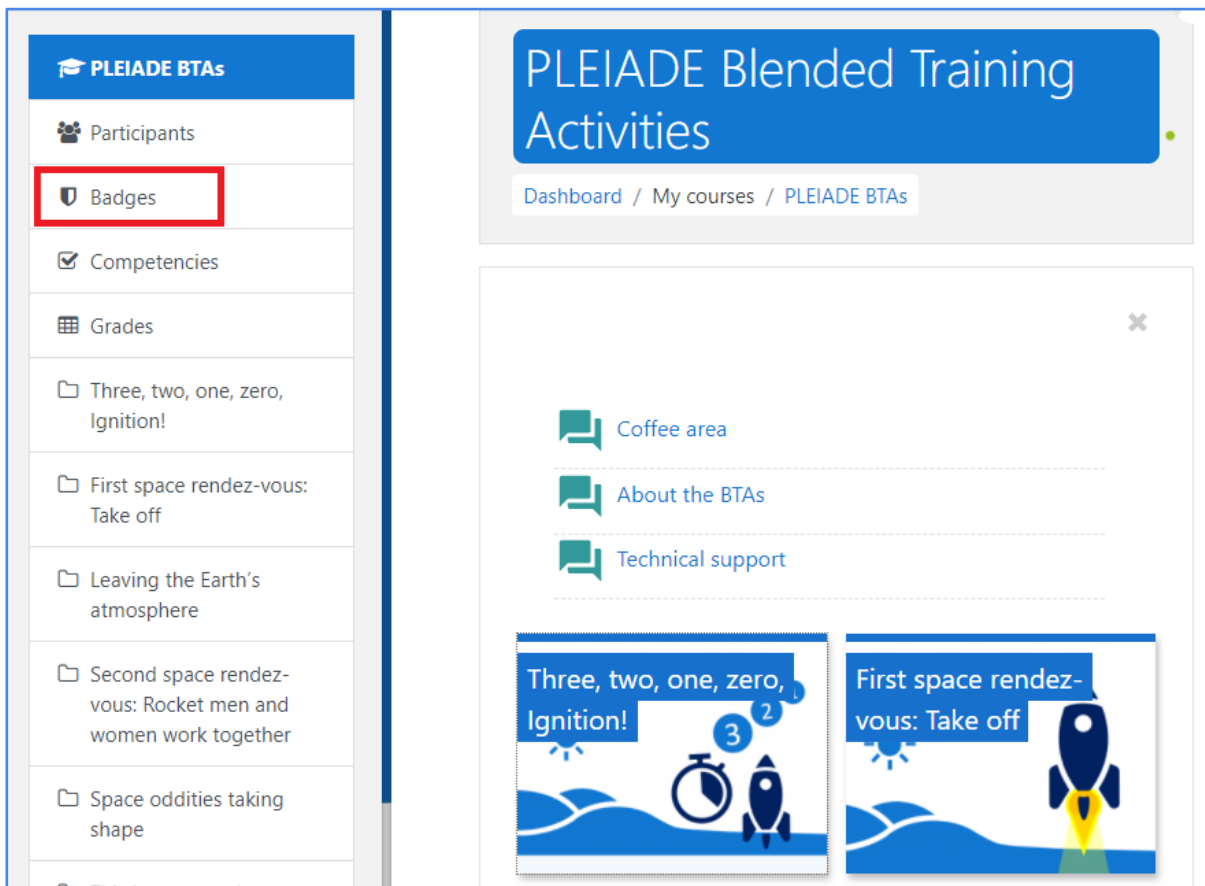


For each bar you can view the chart data. Also, you can view the detail for each of the 4Cs.

- Show our collaborative connect points
- Show our collaborative consume points
- Show our collaborative contribute points
- Show our collaborative create points

10 Badges

The platform implements badges. These represent achievements you reached by performing specific actions. Badges are awarded after specific events in the PLEIADE BTAs, and you will be notified when the opportunity to earn a badge arises. To see your badges, click on the "Badges" section in the main menu.



This will let you access a page in which you will be shown the badges you earned.

11 Quick Reference

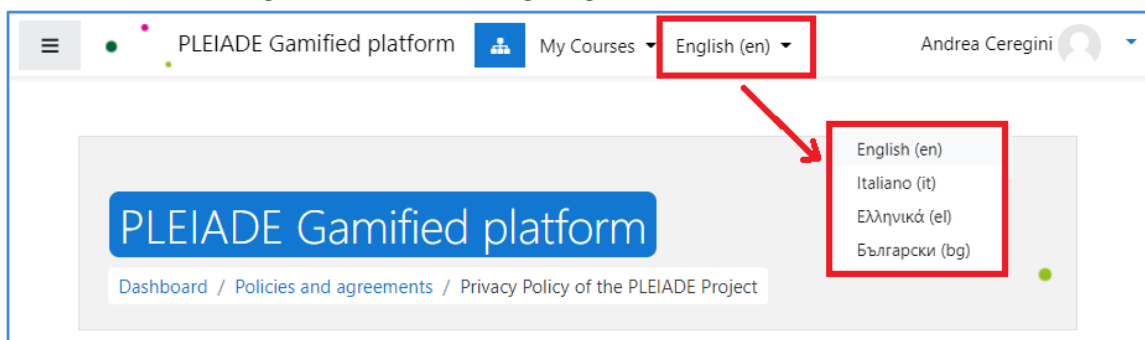
11.1 How do I change my time zone?

In order to avoid confusion around activities that starts at a given hour (i.e. Webinar) it is very important to set the correct time zone.

To do this:

- Access your profile page and click on **Edit profile**;
- Set the timezone by selecting the correct value in the **Timezone** drop-down menu (e.g. Europe/Sofia)
- Click on the blue **Update profile** button to save the change.

11.2 How do I change interface language?



Most of the content of the PLEIADE gamified platform is available in four different languages: English, Italian, Bulgarian, and Greek.

To change the currently set language:

- click on the language selection menu in the upper-left corner of any page
- select the preferred language from the dropdown menu