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Documentation of the plugin "Moodle-eAarjav"

The Moodle-eAarjav plugin is designed to provide a seamless integration of eAarjav plagiarism detection system with Moodle Learning Management System.

The Moodle-eAarjav sends student answers from the Moodle to eAarjav.Edu system for similarity check, and then returns the results, along with links to both a brief and a full report, back to the Moodle. The plugin is capable of checking:

- student assignment submissions in both text and file formats;
- student forum post and any files attached to these messages;
- student essay answers in quiz;
- student lesson essay answers any files attached to them.

Checks can be either automatic or manual, and teachers can adjust the mode for the entire course or for each individual activities. The similarity check process uses all of the eAarjav.Edu search modules specified in the sales agreement.

The installation and setup process for the Moodle-eAarjav plugin is described in the Moodle Administrator's Guide, whereas module's course setup and the methodology for checking student answers for text reuse can be found in the Teacher's Guide.

- Administration's Guide
- Teacher's Guide

Administration's Guide

- Installing the Plugin in the Moodle
- eAarjav System Activation
- Applying Check Parameters to the Entire Moodle
- Supported file types
- Default eAarjav settings in the assignments
- Check event log settings
- Additional Reused Text Source Fields
- Configuring the Task Scheduler in Moodle
- Settling Role Permissions in Moodle
- ExternalUserID Field
- Troubleshooting

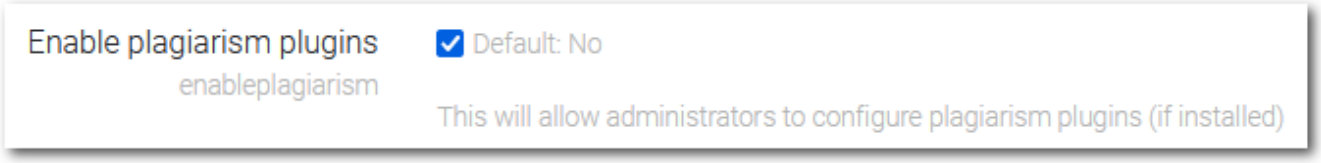
Installing the Plugin in the Moodle

To integrate your Moodle-based Learning Management System (LMS) with the eAarjav.Edu system, your company needs to have a contract with eAarjav OÜ company for using the eAarjav software. In your eAarjav.Edu account, create a user with administrator rights and contact eAarjav's support, requesting access to the eAarjav.Edu system's program interface for this user and API access details for your company.

Make sure to also install the Moodle system. This open-source software is distributed free of charge under the GNU GPL v3 license and can be downloaded from the official Moodle website: https://download.moodle.org/.

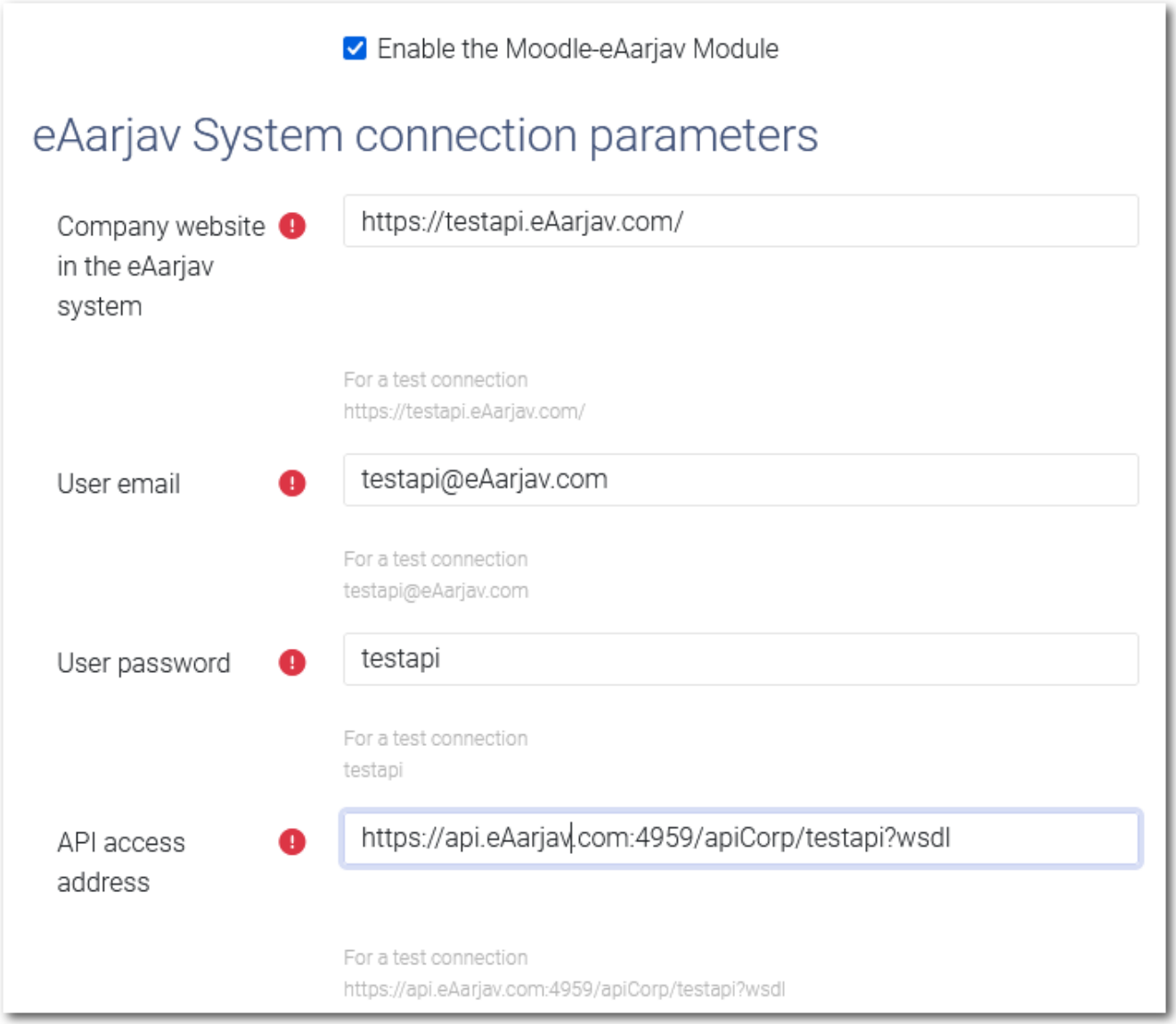
Download and install the plugin as normal, using the Administration/Plugins/Install Plugins menu. The plugin is designed for Moodle version 3.1 and up, and has not been tested on earlier versions of Moodle.

Install the plugin in the Moodle. Go to the Administration/Advanced Features page and activate the plagiarism plugins:

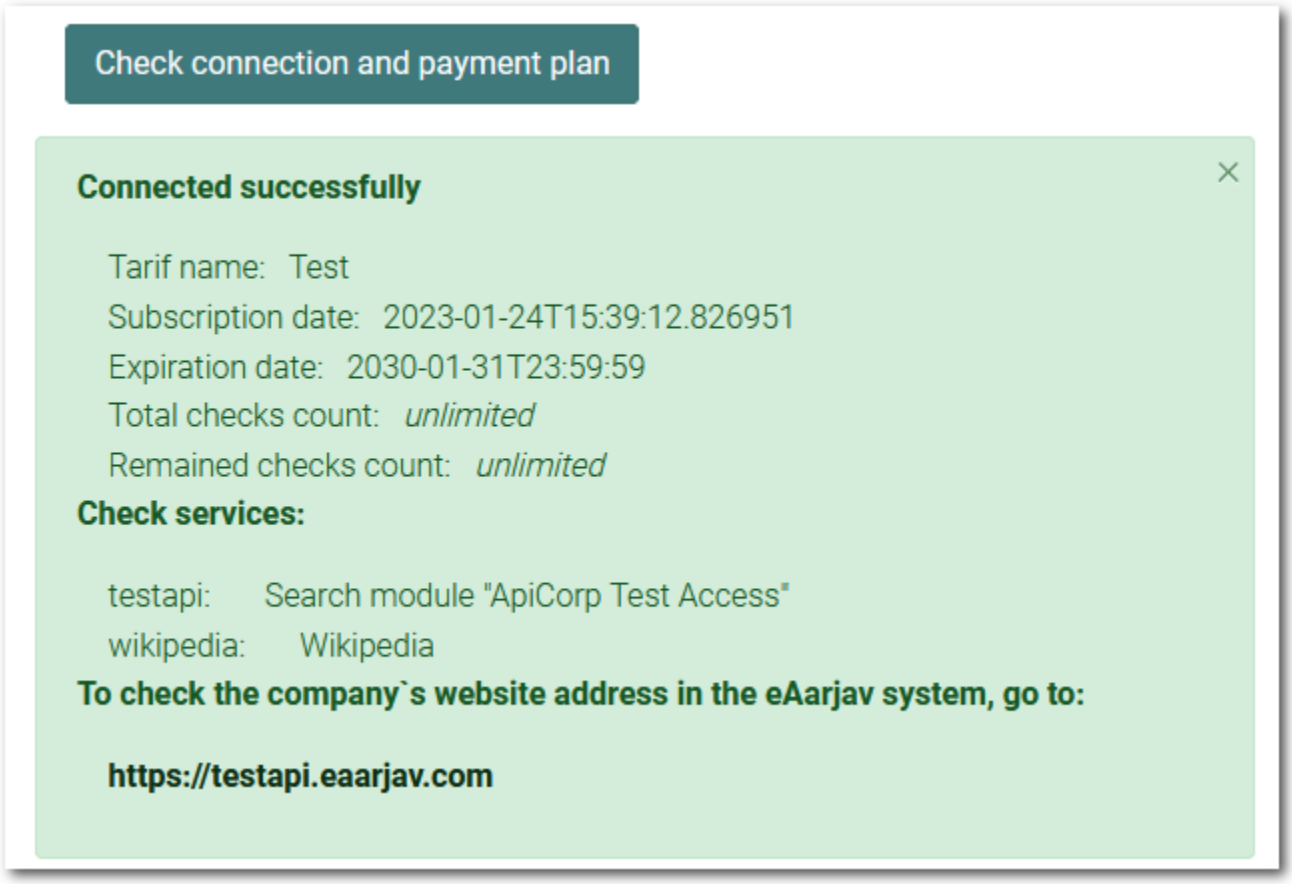


eAarjav System Activation

Go to Administration/Plugins/Plagiarism Prevention/Moodle-eAarjav Plugin. Enable the plugin and input the parameters for activating the eAarjav system's interface. Below is an example of activating the eAarjav system's test program interface:



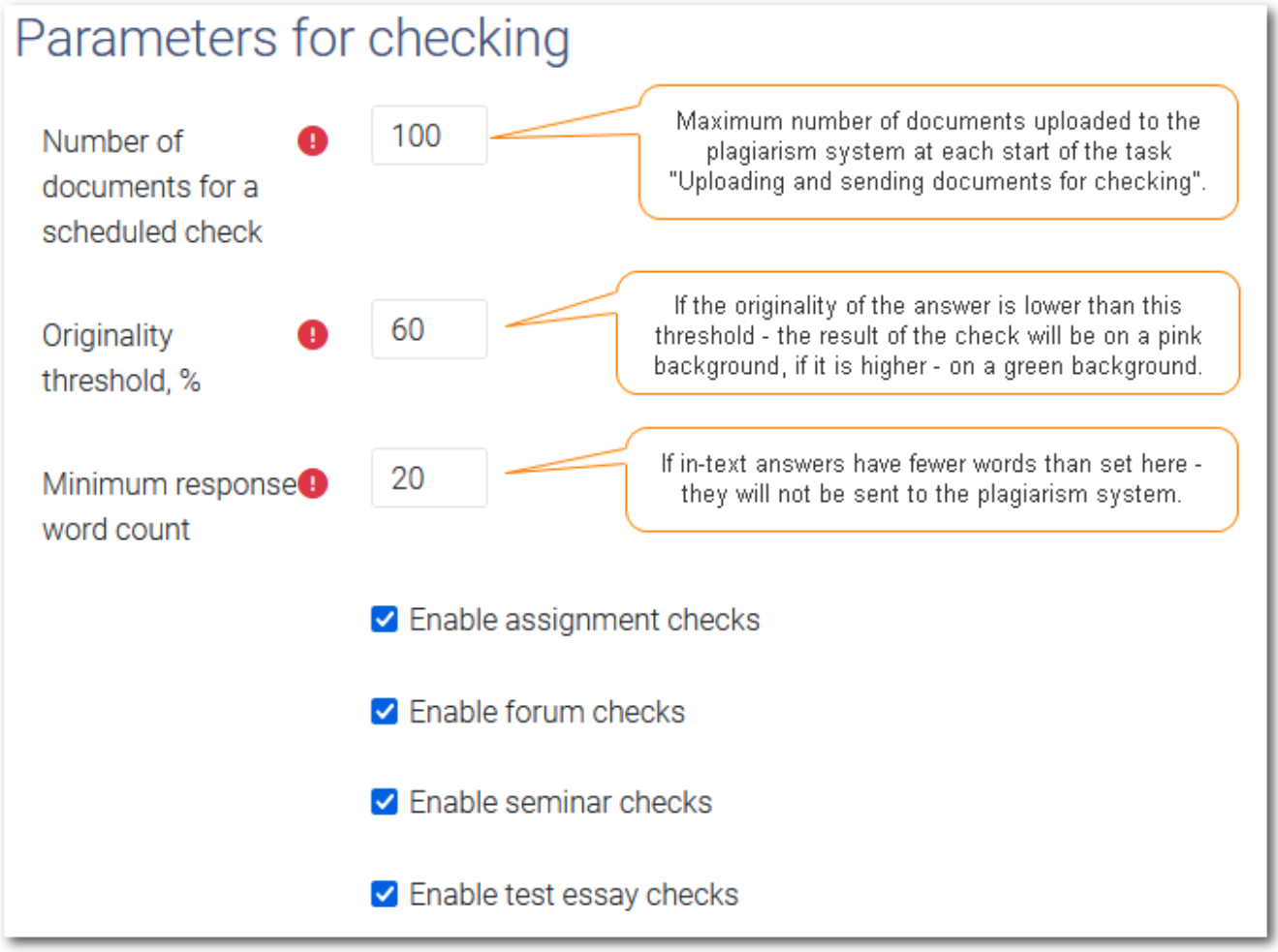
Click on the "Check connection and payment plan" button. This should display information about your current rate plan:



If an error message appears, verify the accuracy of the activation parameters. If this doesn't resolve the issue, please reach out to the developer's support.

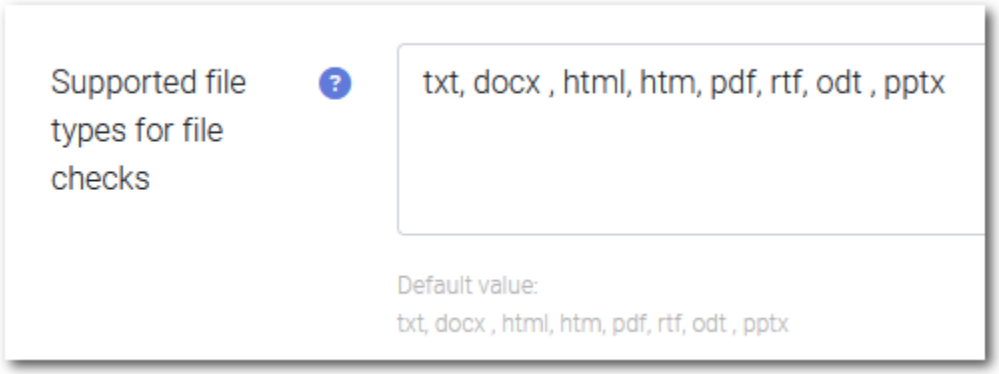
Applying Check Parameters to the Entire Moodle

On the Plugin Settings page, input the check parameters that apply to the entire Moodle:



Supported file types

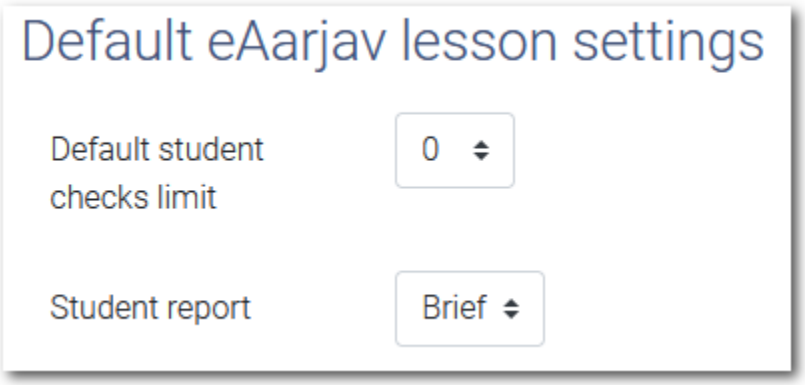
In this field, list the file types (separated by commas) that can be uploaded to the eAarjav system via API:



If a student uploads a file type not listed in the Supported File Types For File Checks field, the file will not be uploaded to the eAarjav system and an error message will be displayed instead of the check results.

Default eAarjav settings in the assignments

The following parameter values are recommended for setup at the system level:



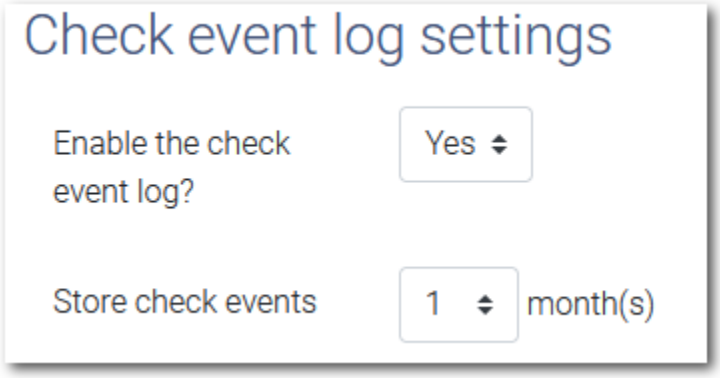
These parameters are described in more detail in the Configuring eAarjav in an Moodle Course article.

Check event log settings

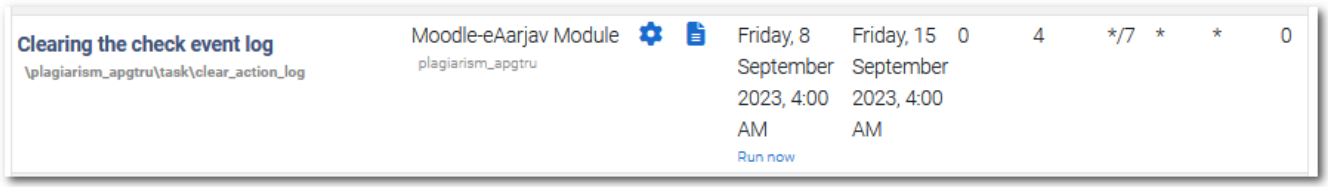
The event log is utilized by Moodle administrators and developers to oversee the checking process within the eAarjav system.

The check event log is stored in the following table: mdl_plagiarism_apgtru_action_log. The mdl_apgtru_log_view is added to the database upon plugin installation for easier viewing.

To maintain the log, you must first activate it in Plugin Settings and set the duration of check event storage:

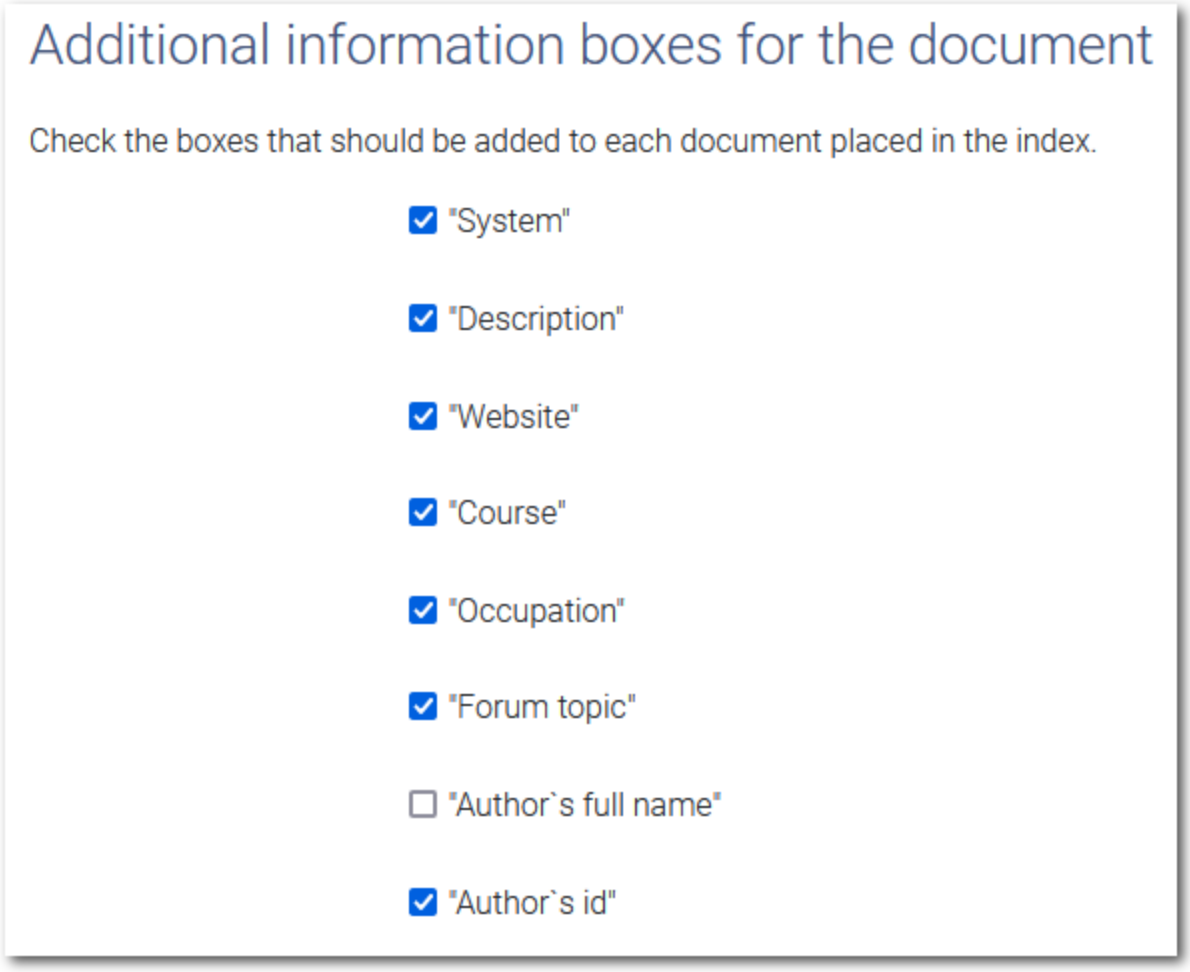


You must go to the Scheduler, activate the Clearing the Check Event Log task, and schedule it to run weekly:

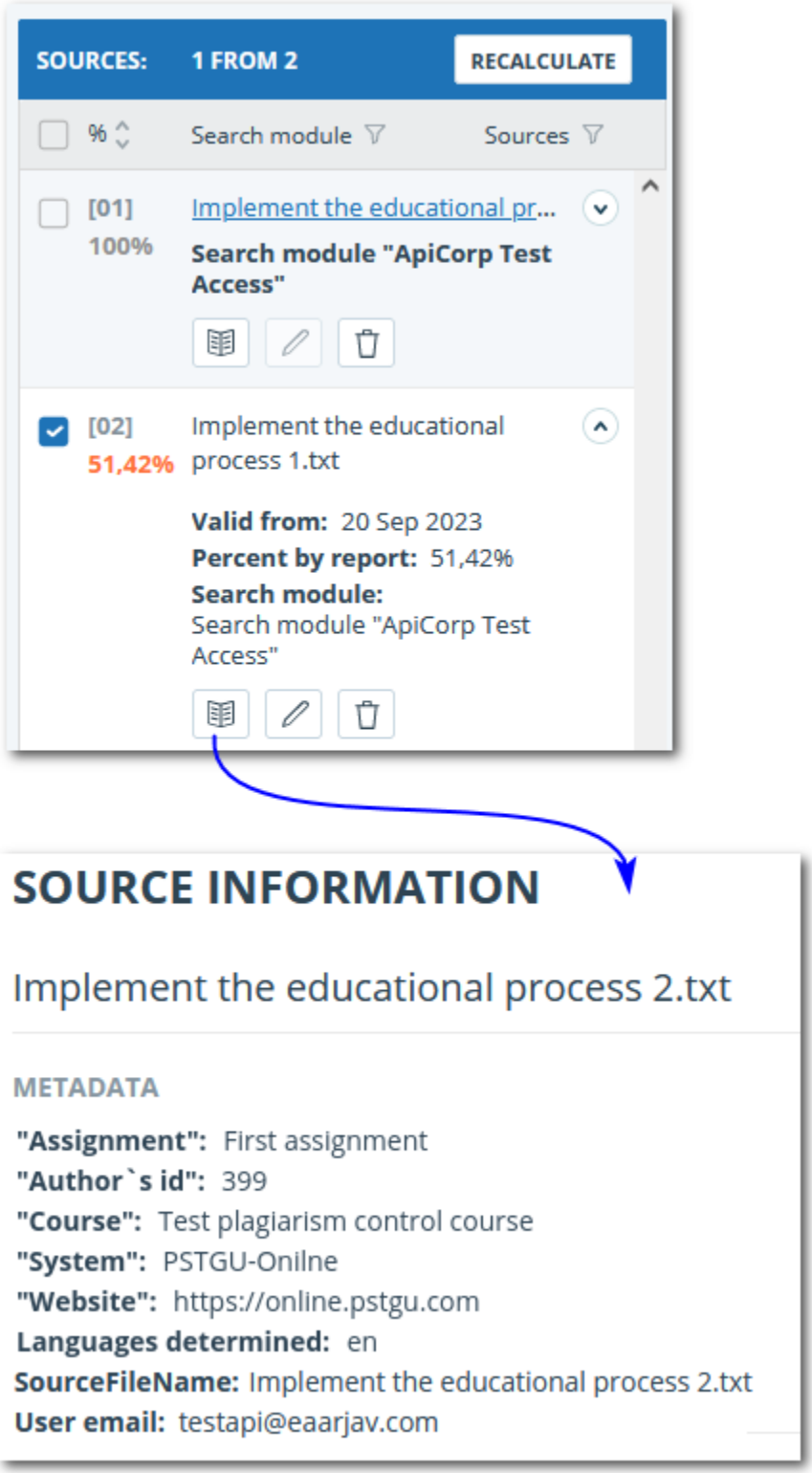


Additional Reused Text Source Fields

On the Plugin Settings page, tick the additional fields that will be sourced from the Moodle and automatically added to each document indexed/added to collection, and displayed among the information on reused text sources.



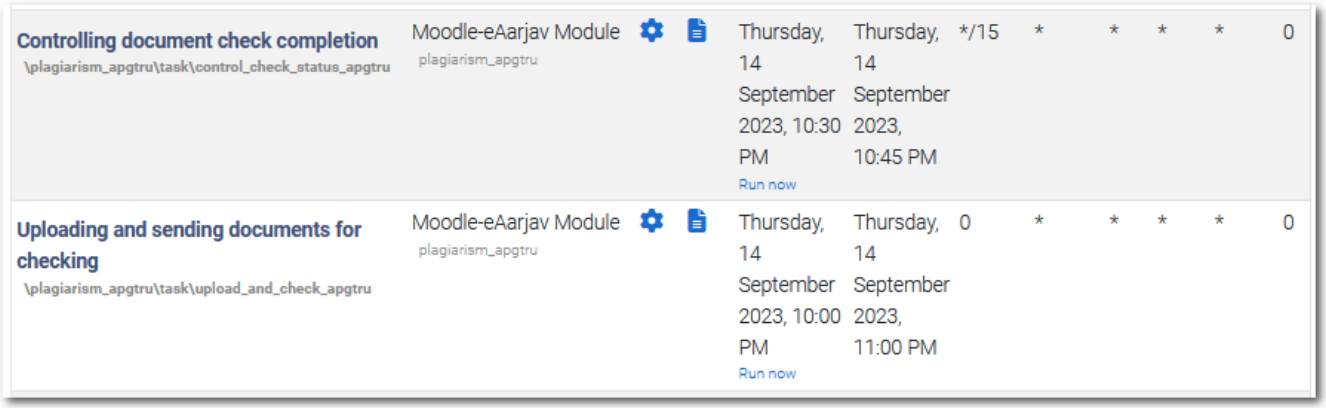
If a document uploaded from the Moodle to the eAarjav system is identified as a reused text source, the verifier will be able to see information about this source: which Moodle this document comes from, its course and activity of origin, and its author:



The System Name and System Description are entered by the Moodle administrator on the Administration/Registration page.

Configuring the Task Scheduler in Moodle

In the Moodle, open the Administration/Server/Task Scheduler page, locate and set up two tasks for the Moodle-eAarjav plugin:



Controlling document check completion \plagiarism_apgtru\task\control_check_status_apgtru	Moodle-eAarjav Module plagiarism_apgtru	Thursday, 14 September 2023, 10:30 PM Run now	Thursday, 14 September 2023, 10:45 PM	*/15	*	*	*	*	0
Uploading and sending documents for checking \plagiarism_apgtru\task\upload_and_check_apgtru	Moodle-eAarjav Module plagiarism_apgtru	Thursday, 14 September 2023, 10:00 PM Run now	Thursday, 14 September 2023, 11:00 PM	0	*	*	*	*	0

The task of uploading and sending documents to the eAarjav system should not run more than once an hour, while the task of check completion control should not run more than once every 15 minutes.

Settling Role Permissions in Moodle

The following permissions are recommended for the Teacher role:

Capability	Permission			
Moodle-eAarjav Module				
Send it to the eAarjav system for checking plagiarism/apgtru:checkapgtru	○ Not set	◉ Allow	○ Prevent	○ Prohibit
Get checked in the eAarjav system plagiarism/apgtru:checkedby	○ Not set	○ Allow	◉ Prevent	○ Prohibit
Set up a check in the eAarjav system for the course plagiarism/apgtru:manage	○ Not set	◉ Allow	○ Prevent	○ Prohibit
Update check results in the eAarjav system plagiarism/apgtru:updatereport	○ Not set	◉ Allow	○ Prevent	○ Prohibit
See the full report in the eAarjav system plagiarism/apgtru:viewfullreadreport	○ Not set	◉ Allow	○ Prevent	○ Prohibit
See and edit the full report in the eAarjav system plagiarism/apgtru:viewfullreport	○ Not set	◉ Allow	○ Prevent	○ Prohibit
See the brief report in the eAarjav system plagiarism/apgtru:viewshortreport	○ Not set	◉ Allow	○ Prevent	○ Prohibit

The following permissions are recommended for the Student role:

Capability	Permission			
Moodle-eAarjav Module				
Send it to the eAarjav system for checking plagiarism/apgtru:checkapgtru	(•) Not set	( ) Allow	( ) Prevent	( ) Prohibit
Get checked in the eAarjav system plagiarism/apgtru:checkedby	( ) Not set	(•) Allow	( ) Prevent	( ) Prohibit
Set up a check in the eAarjav system for the course plagiarism/apgtru:manage	(•) Not set	( ) Allow	( ) Prevent	( ) Prohibit
Update check results in the eAarjav system plagiarism/apgtru:updatereport	( ) Not set	( ) Allow	( ) Prevent	(•) Prohibit
See the full report in the eAarjav system plagiarism/apgtru:viewfullreadreport	(•) Not set	( ) Allow	( ) Prevent	( ) Prohibit
See and edit the full report in the eAarjav system plagiarism/apgtru:viewfullreport	(•) Not set	( ) Allow	( ) Prevent	( ) Prohibit
See the brief report in the eAarjav system plagiarism/apgtru:viewshortreport	( ) Not set	(•) Allow	( ) Prevent	( ) Prohibit

ExternalUserID Field

ExternalUserID field under the DocData parameter is a mandatory part of the eAarjav system's software interface. This field must contain a unique identifier for the end user of the information system (IS) integrated with the eAarjav system via API. The addition of this field aims to enhance the efficiency of automatic user blocking upon detecting suspicious activity.

The algorithm for filling in this field is as follows:

> In case of manual check, the ExternalUserID field is filled with the Moodle ID of the user (either teacher or student) that initiated the check.
>
> In case of automatic check, the ExternalUserID field is filled with the name of the Moodle scheduler task, "task\upload_and_check_apgtru", which is responsible for uploading documents to eAarjav and initiating the check.

Troubleshooting

- Troubleshooting
- Updating the Plugin
- Personnel Requirements
- Technical Support from the Developer

Troubleshooting

Below is a list of errors that occur the most often during plugin setup, along with ways of resolving them

Error Description	Causes and Solutions
When clicking the "Check connection and payment plan" button on the Settings page, the following message appears: Failed to check: SOAP-ERROR: Parsing WSDL: ...	1) The eAarjav server address was entered incorrectly in the API Access Address field (for example, with http: instead of https:) 2) The port specified in the API Access Address field is blocked in the organization's local network.
There is no special icon for the submission in the student's assignment so it can't be sent for a plagiarism check.	1) The "Enable plagiarism plugins" box under the Advanced Features section in the Moodle website settings was not ticked. 2) The plugin use permissions for the Student and Teacher roles were configured incorrectly, see the Settling Role Permissions in Moodle section 3) The assignment submission that needs to be checked in eAarjav is submitted by a user without a Student role, or an attempt to run an eAarjav check is being made by a user without a Teacher role.
The check runs normally in the manual mode and fails in the automatic mode.	1) The Moodle website's cron is not running. 2) The plugin tasks are either disabled or misconfigured, see the Configuring the Task Scheduler section.

Updating the Plugin

The latest version of the plugin can be downloaded from the eAarjav website. To update the plugin, you need to first install its distribution through the Moodle menu: Administration/Plugins/Install Plugins. The settings page displays the plugin's current version number.

Personnel Requirements

Installation and configuration of the plugin should be handled by a professional with Moodle website administrator rights and experience in Moodle customization.

Moodle installation and cron configuration should be handled by a professional with administrator access to the server where Moodle is installed, as well as with experience in system administration.

Technical Support from the Developer

The documentation for the Moodle-eAarjav plugin includes comprehensive guides for administrators and teachers, sufficient for the plugin's independent configuration and use.

If required, however, the organization can enter into a paid technical support contract with the developers for a period ranging from 2 to 12 months.

Should you encounter any program errors with the plugin, please contact Customer Support Service for help support@eAarjav.com .

Teacher's Guide

In order to learn how to check student papers for text reuse, Moodle Learning Management System (LMS) teachers should familiarize themselves with the following sections of the official eAarjav system developer's guide:

- 1.1 Terms and Definitions
- 1.2 Purpose and Use Conditions
- 8 The report on the text reuse check result

Next, it is essential to understand the specifics of configuring and checking student answer in the Moodle:

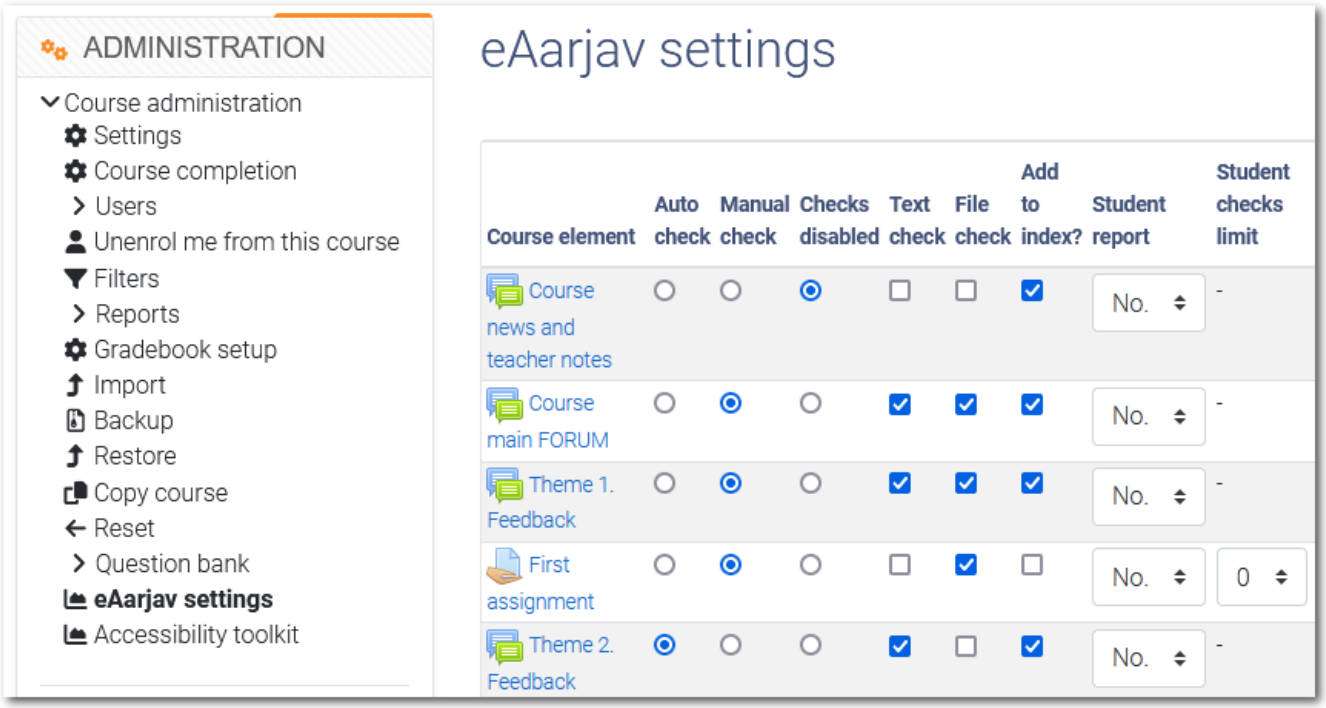
- Configuring eAarjav in an Moodle Course
- Checking Student Forum Posts
- Checking Student Assignments
- Checking Multiple Assignment Attempts
- Updating Check Results
- Student checks limit
- Working with the eAarjav Report

Configuring eAarjav in an Moodle Course

- eAarjav Settings Course Page
- Auto check
- Manual check
- Checking Texts and Files
- Add to index?
- Student report
- Student checks limit
- The eAarjav Settings in the Assignment

eAarjav Settings Course Page

Selecting eAarjav Settings in the Course Administration menu will open a page for customizing the eAarjav check parameters for all course assignments, forums, quizzes and lessons:



Note:

- all check parameters can also be set individually for each activity under the eAarjav Settings section

Auto check

During automatic checks, all student answers sent for review are automatically sent to the eAarjav system as per the schedule set by the Moodle administrator. Typically, submissions are sent to be checked every 1-2 hours, and every 15 minutes the check completion is verified and the results are recorded in the Moodle.

If a teacher opens an activity page while the automatic check is still ongoing, the "Submit for eAarjav Check" buttons will appear next to the student answer that have not been checked yet. The teacher can either revisit the activity later or press these buttons to manually initiate the check process.

Manual check

During manual checks, the teacher only submits those student answers that they have selected. This can be done by pressing the button located next to the uploaded activity and waiting for the check process to finish.

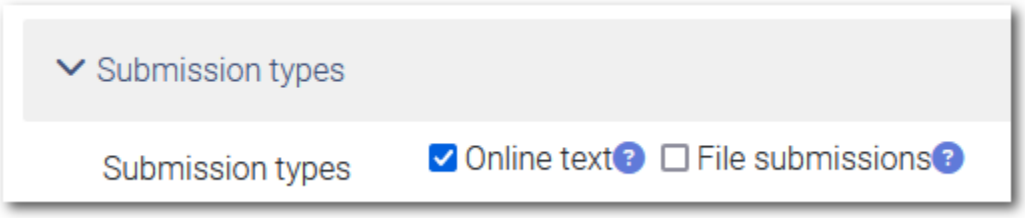
The manual check process is described in more detail in the following articles:

Checking Student Assignments

Checking Student Forum Posts

Checking Texts and Files

In the settings for assignments and forums, under Submission Types, the teacher needs to select which types of student submissions are permissible in the assignment:



In the eAarjav settings, the teacher needs to indicate which types of student submissions should undergo eAarjav checks (texts, files, or both).

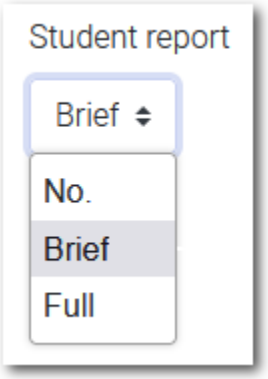
Add to index?

If "Add to index" is selected, then after the student answer has been checked by eAarjav, it will be automatically added to the index (university collection) and will be referenced as a potential text reuse source when checking other student answers.

If the option is not selected, the student answer will still be checked but it won't be added to the index.

Student report

The teacher can decide whether to show students the results of the check and if so, what kind of report to display:

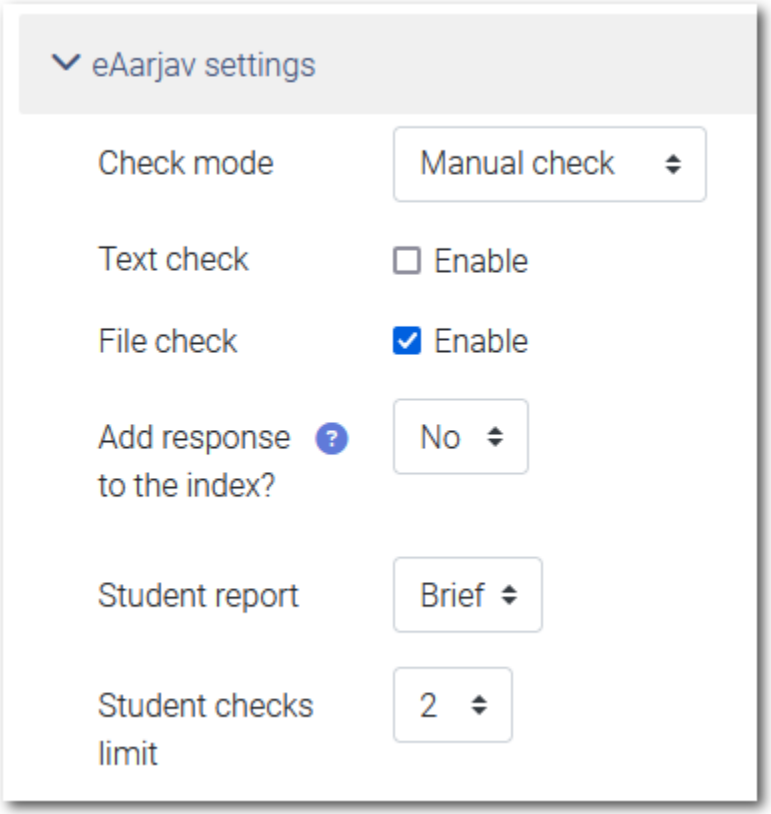


Student checks limit

The Student Checks Limit feature is only used in assignments. It allows students to submit drafts of their submissions for eAarjav checks. More detailed customization and recommendations for using this parameter are described on the Student Checks Limit page.

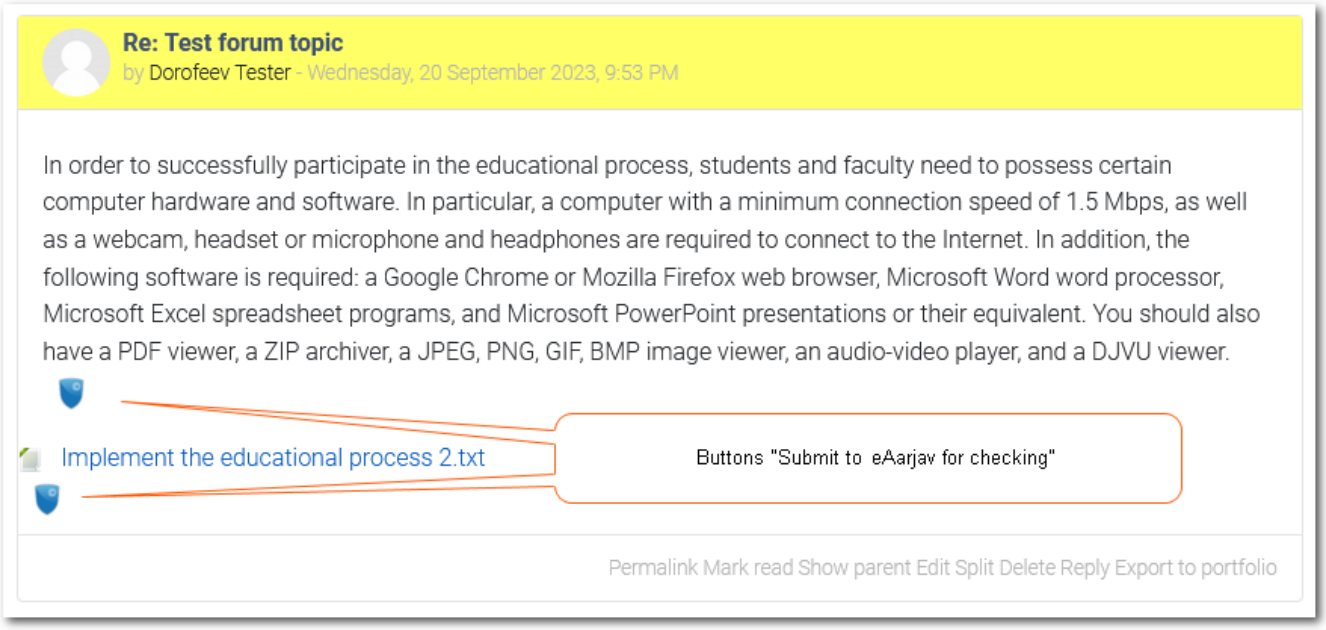
The eAarjav Settings in the Assignment

All of the aforementioned check parameters can also be adjusted in the settings for each assignments, forums, quizzes and lessons, under the eAarjav Settings section:


eAarjav settings
Check mode
Manual check
Text check
Enable
File check
Enable
Add response to the index?
No
Student report
Brief
Student checks limit
2

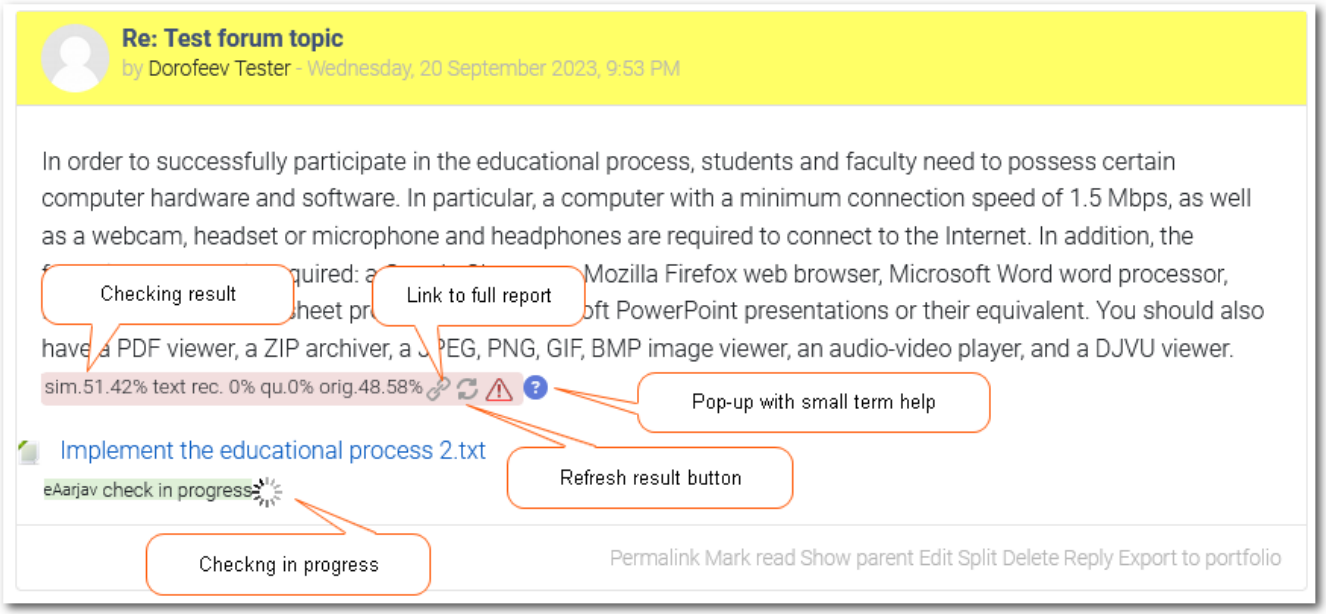
Checking Student Forum Posts

Beneath the students' posts and attached files on forum pages where text and file checks are enabled, the teacher will see a button (the eAarjav company logo) for initiating a post check in the eAarjav system:



In forums, the eAarjav check buttons only appear on students' posts, not on teachers' posts. These buttons are not visible to students.

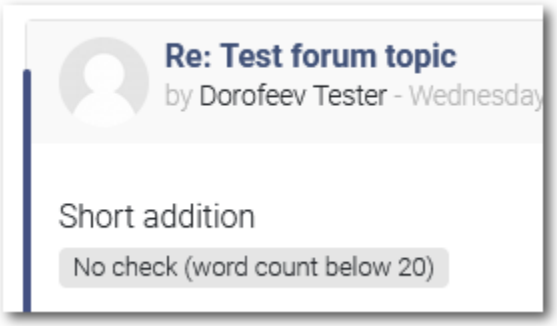
Upon pressing the button, the post is sent to be checked. While the check is ongoing, a spinning circle is displayed. Once the check is complete, the results are displayed as follows:



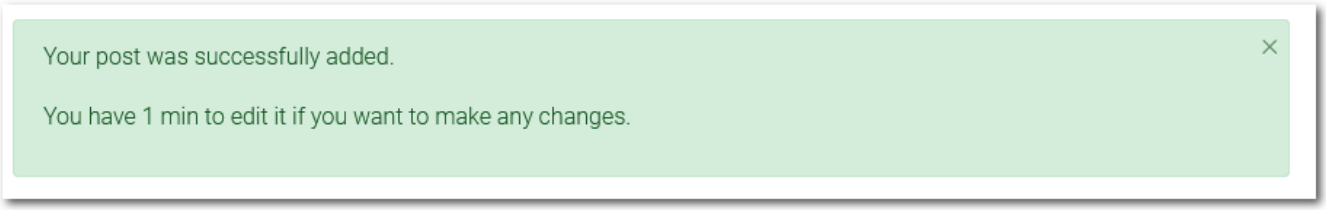
If originality of the student post exceeds the threshold set by the Moodle administrator, the check result has a green background, otherwise it has a pink background.

To the right of the check results, there is an icon with a link that opens the eAarjav webpage with the check report. The teacher sees the full report, while students see its brief version. The "Update check result" button is only visible to the teacher and allows them to update the check result in the Moodle after editing the report in the eAarjav system.

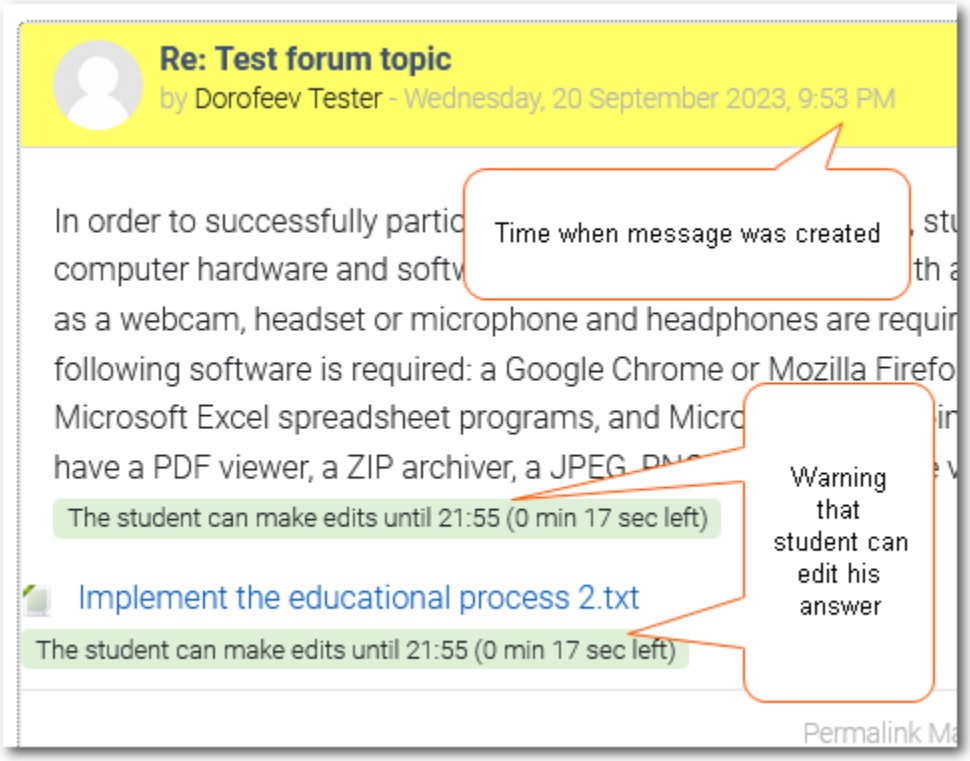
If a student post contains fewer words than specified in the plugin settings, it does not get submitted to be checked, with the "No check" status being displayed instead:



Forums have a certain time limit during which the poster can edit their post. This time limit is set by the Moodle administrator and is displayed at the top of the forum page after each new post is posted:



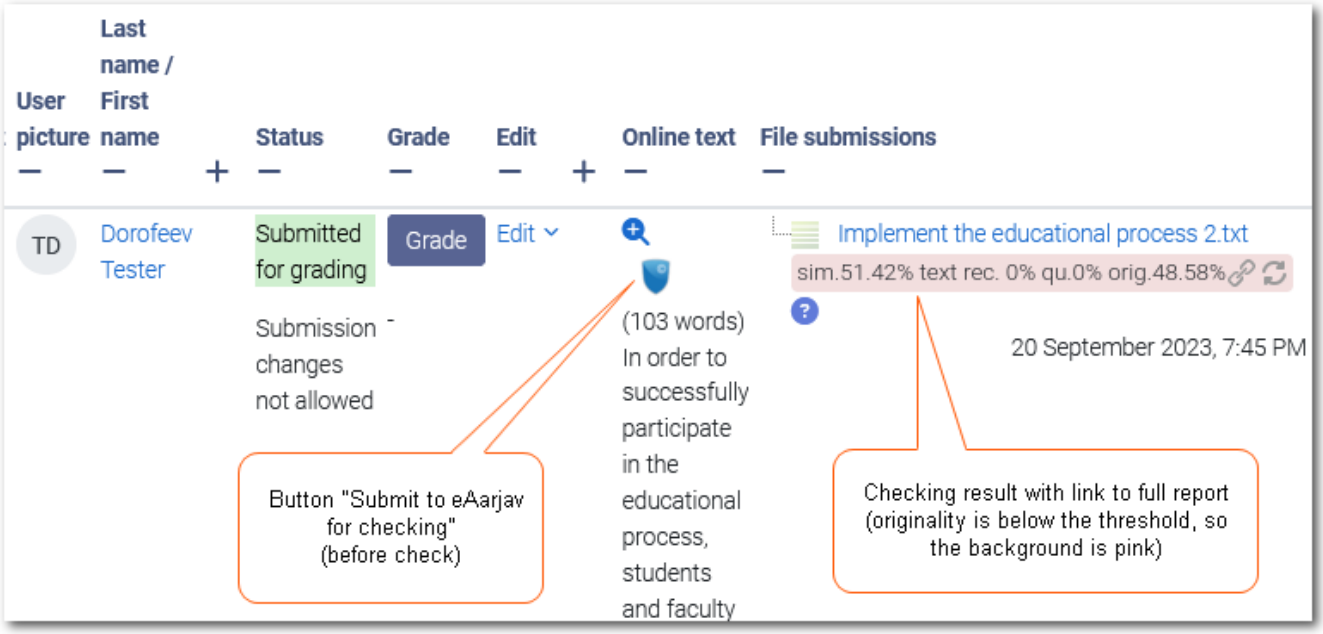
If the forum has eAarjav system checks enabled and the editing time limit for a student's post has not ended yet, a warning is displayed instead of the check submission button , indicating when the time limit will end:



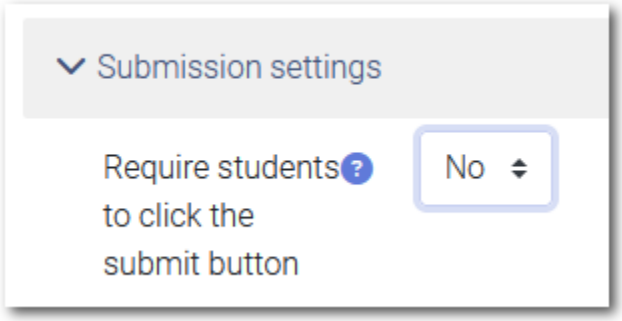
Once the time specified in the warning has passed, the user will need to refresh the page. The warning will then be replaced by the check submission button .

Checking Student Assignments

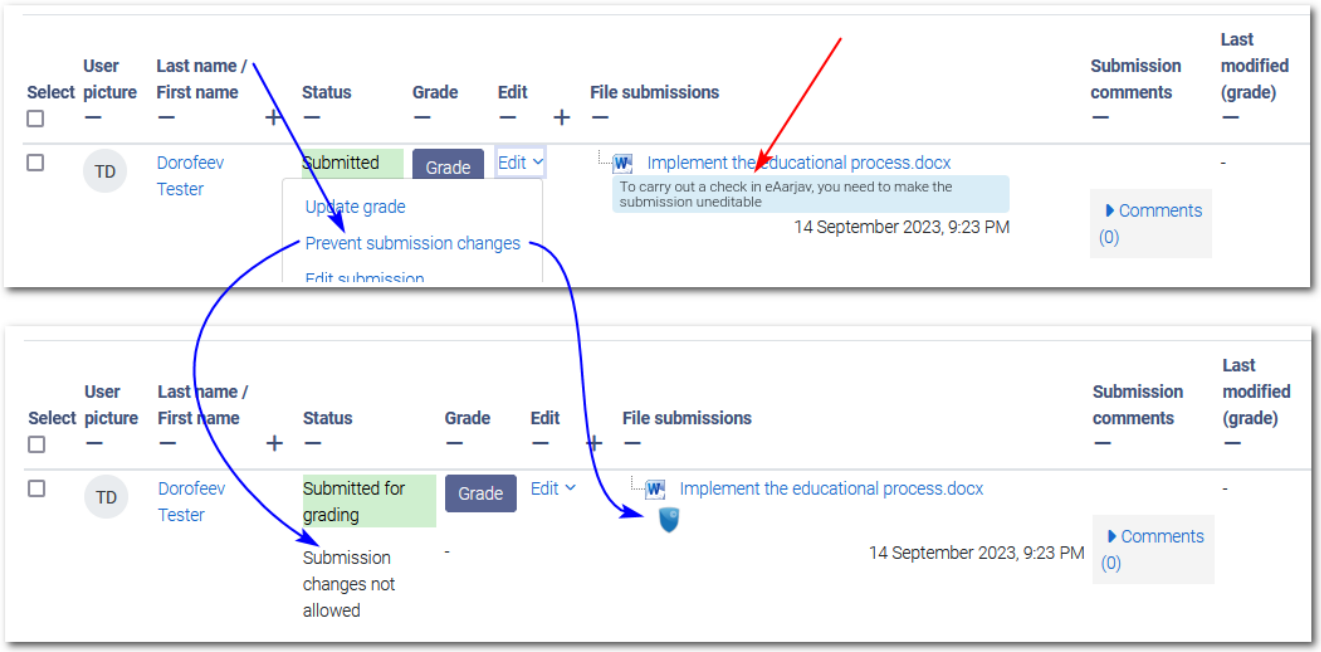
The process of checking student assignments is the same as checking forums. On the assignment page, next to the student submissions that haven't been checked yet, there will be a button for submitting student submissions to be checked, and next to the checked student submissions, there will be the results of the check:



It is possible to customize the assignment settings in the Submission setting section so that the student will not need to press "Submit":



Unless the teacher has already prohibited changing the uploaded submission, a warning will be displayed next to the uploaded submission: "To carry out a check in eAarjav, you need to make the submission uneditable". After changes are prohibited, a button will appear for submitting the submission to be checked:


Select
User picture
Last name / First name
Status
Grade
Edit
File submissions
Submission comments
Last modified (grade)
TD
Dorofeev Tester
Submitted
Grade
Edit
Update grade
Prevent submission changes
Edit submission
Implement the educational process.docx
To carry out a check in eAarjav, you need to make the submission uneditable
14 September 2023, 9:23 PM
Comments (0)
-

Select
User picture
Last name / First name
Status
Grade
Edit
File submissions
Submission comments
Last modified (grade)
TD
Dorofeev Tester
Submitted for grading
Submission changes not allowed
Grade
Edit
Implement the educational process.docx
14 September 2023, 9:23 PM
Comments (0)
-
-

Checking Multiple Assignment Attempts

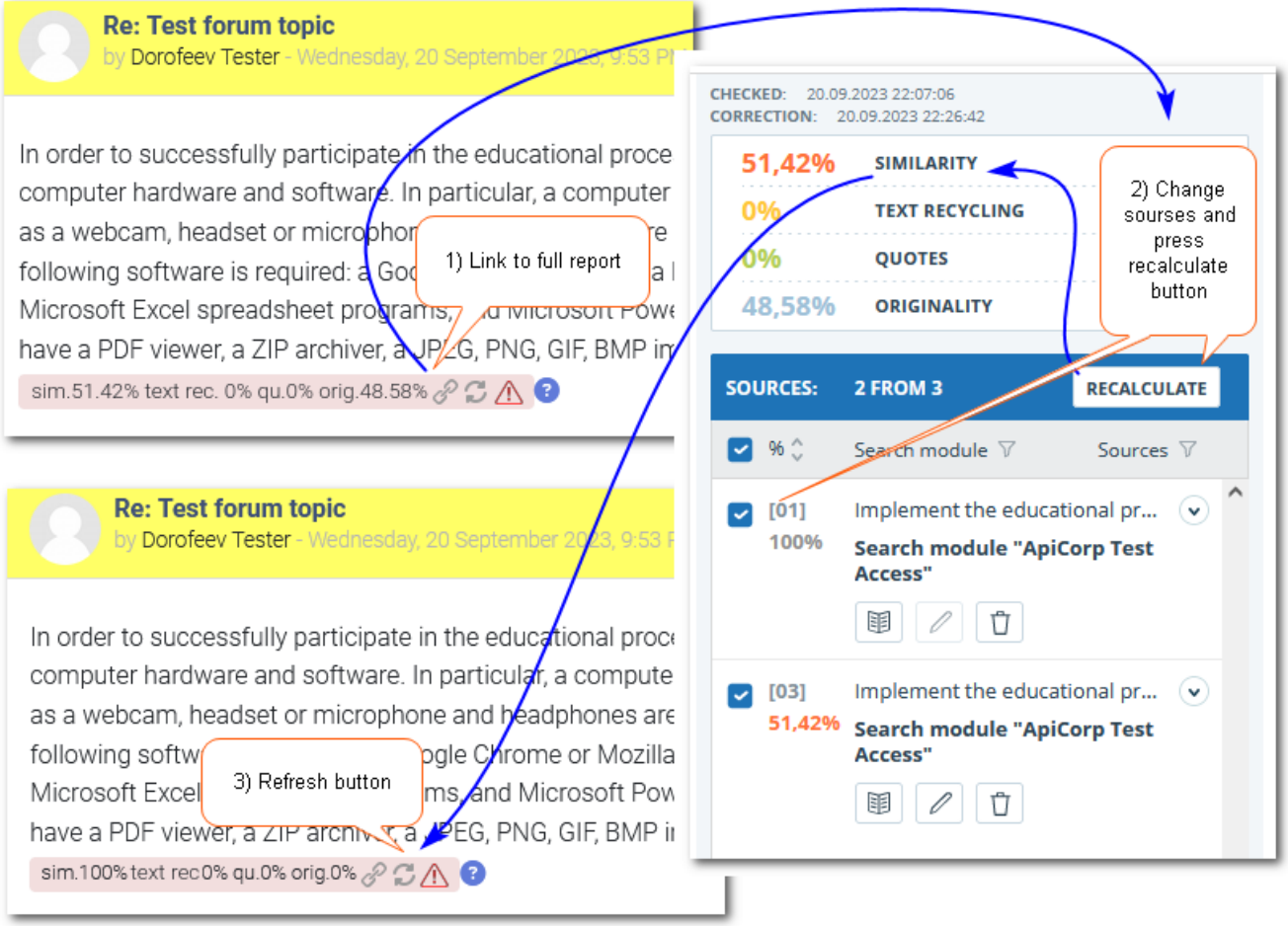
Once new students submissions and forum messages checked in the eAarjav.Edu system, they are immediately indexed (added to the university's collection) and used for checking other answers.

When a student submits a new answer to be checked in an assignment or forum thread, their previous answer or draft will be removed from the index and the new one will be indexed instead. This measure is in place so that new answer isn't compared to the previous one. Consequently, the index will only contain the most recent answer submitted by the student for a check in the eAarjav.Edu system.

In assignment, the teacher has the ability to manually allow students to make a new attempt and submit a revised submission. However, in forums, the teacher has no such option, and the student has to post a new message instead. To prevent the new post from displacing the student's initial post from the index, manual forum checks are recommended.

Updating Check Results

While viewing the full report in the eAarjav system, the user can disable or enable text reuse sources, modify their type, and recalculate the check results. If the teacher recalculates the check results for the student answer on the eAarjav website, they must press the Refresh button in the Moodle to save the new result within the system:



Student checks limit

- Student Checks Limit Parameter
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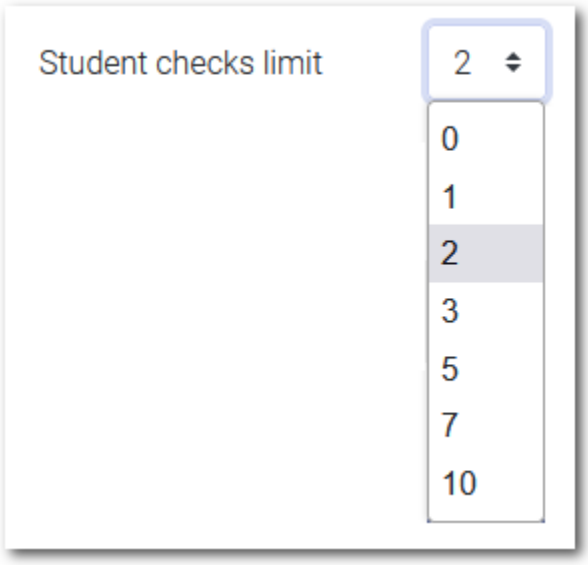
Student Checks Limit Parameter

A teacher can allow their students to check their own submissions within the eAarjav system. To do this, the teacher needs to set the number of checks a student can perform in the Student Checks Limit parameter under the plugin settings:



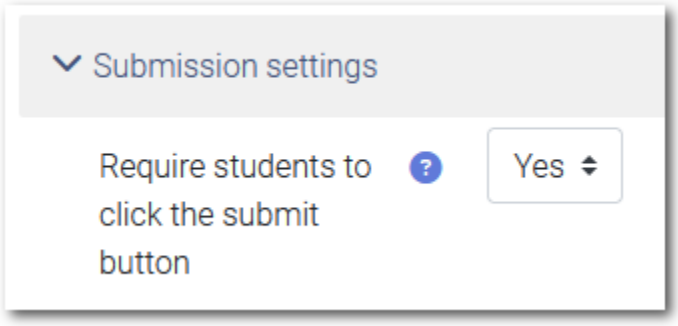
If a student is permitted by their teacher to check their own submissions in the eAarjav system, it would be beneficial to also allow this student to view the full check report. This way, the student can analyze the text reuse sources and revise their submitted answer as necessary. However, the student will not be able to edit the full report as their link will not provide them with an editing access.

The checks limit will be applied individually to each type of submission within a submission. For instance, if the Student Checks Limit is set to 2 and the student submits their submissions in text format with two files attached, they will be able to check their text twice and each file twice.

If the teacher allows the student to make a new attempt, the checks limit for that attempt is reset.

Students can only check the drafts of their own submission

The student will be able to check their submission in eAarjav as long as the submission status remains as "Draft" (not submitted). This is determined by the "Require students to click the submit button" parameter in the assignment settings:



If the value of the "Require students to click the submit button" parameter = "Yes", the student' submission will remain a draft until the "Submit for eAarjav Check" button is pressed.

If the value of the "Require students to click the submit button" parameter = "No", the student submission will remain a draft until the teacher restricts any further changes.

Assignment Configuration Guidelines

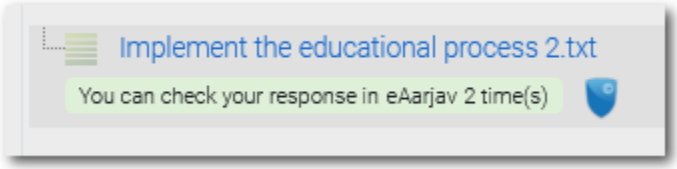
To prevent system from finding similarities in the student's own previous submissions within an assignment, the integration plugin will automatically delete all of the student's previous submissions from the index (university collection), as well as erase all drafts for the current assignment attempts, before forwarding the submission to eAarjav. Consequently, only the student's latest submission will be indexed.

When eAarjav is used for checking graduation theses, term answers, and other similar tasks, the following assignment setting customization is recommended:

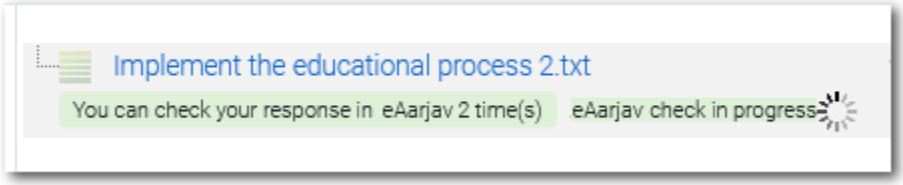
1. Under the "Submission types" section, select "File" as the only permissible answer type.
2. Under the "Maximum Number of Uploaded Files" parameter, select 1 file. Otherwise, if, for instance, two files are permitted for upload, a student could submit their answer in the first file and use the second file for the appendix, which would then "displace" the submission from the index.

Student Assignment Self-Check

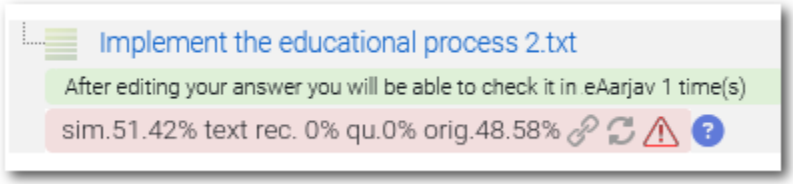
After saving their submission, the student will see a notification showing the checks limit and the "Submit for eAarjav Check" button:



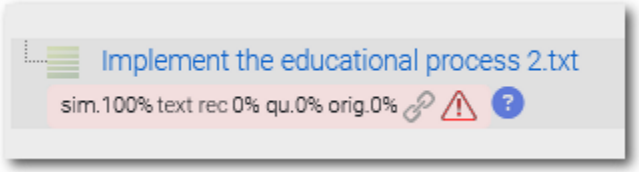
The check usually takes 20 to 60 seconds. A spinning circle is displayed during this time:



Once the student has completed the check, they will see the result and the remaining number of checks:



Once the checks limit is reached, only the check result will be displayed:



Working with the eAarjav Report

It is up to the teacher which version of the report to make visible to students, by selecting the respective option in the activity settings under the eAarjav section. If "Full Report" is selected, students will be able to see all sources for text reuse fragments, but won't be able to edit them.

Please refer to the Report section of the User Guide at manual.eaarjav.com for the detailed information on viewing/editing reports.