



Math trails in school, curriculum and educational environments of Europe

Teacher Training in XXX
Peer & Expert Review

Co-funded by the
Erasmus+ Programme
of the European Union



Introduction

- Exchange of Experiences

Peer Review

- Organization
- Criteria
- Feedback and Improvements of Tasks

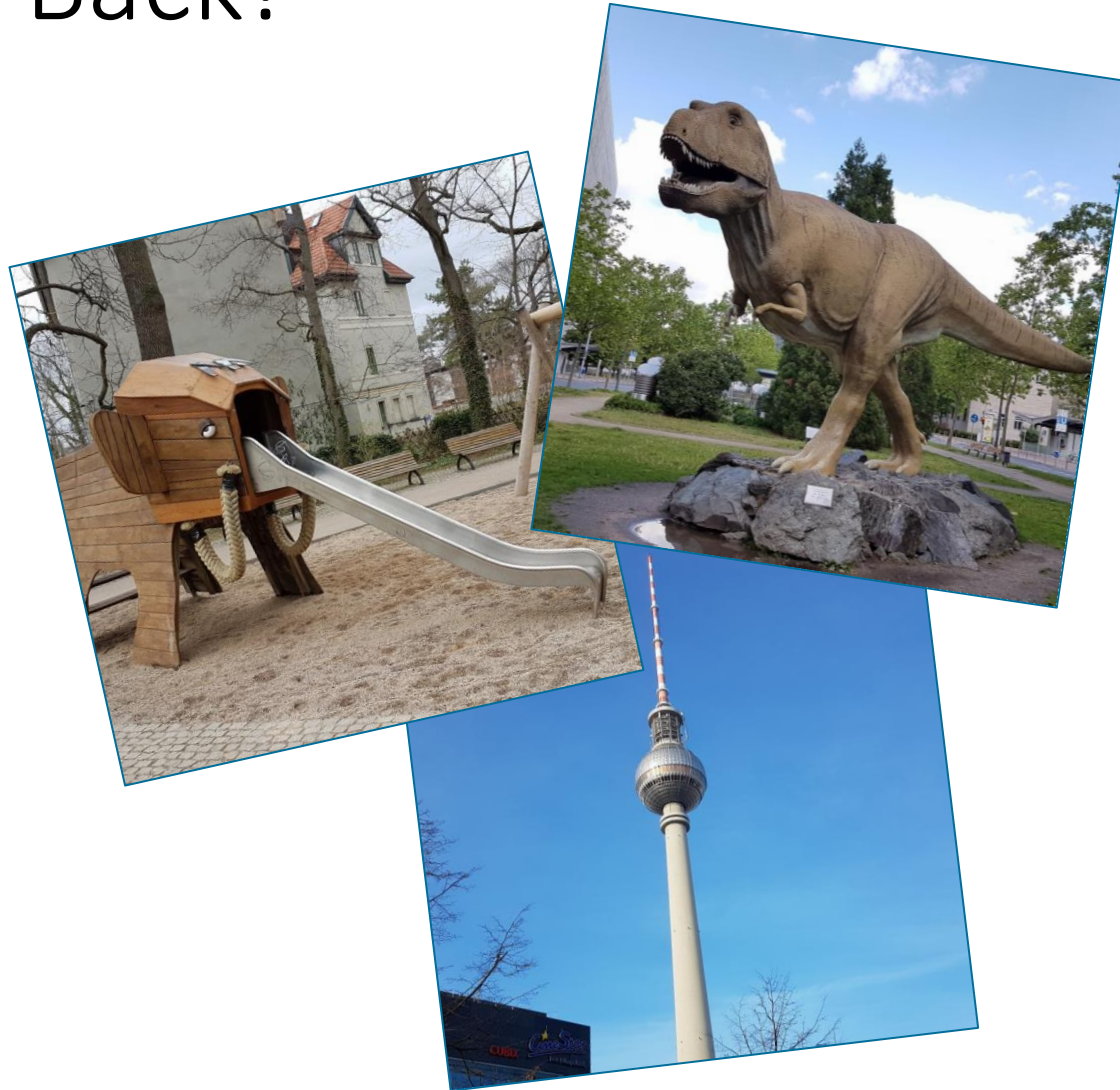
Expert Review

- Review Systems
- The MCM Review System
- Examples and Tasks

Reflection and Outlook

- Additional Features

Welcome Back!



Sharing Experiences!

- We hope you had a good time experiencing MathCityMap during the training's break.
- Let's share...
 - Your experiences in designing own tasks
 - Your experiences in using MCM with students
 - Your problems, concerns and questions on MCM

Today you will...

- Receive a feedback from the participants on your tasks
- Learn about the review system of MathCityMap
- Get the chance to become a MathCityMap Expert Reviewer



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Peer Review Organization

- **Goal:**
 - Improve the tasks that have been created in the meantime
- **Organization:**
 - Form groups of three and give feedback on each group member's tasks
 - Consider the following guidelines

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Peer Review Guidelines

- For each task:
 - Read all hints
 - Read sample solution
 - Read „About this object“
- Is the task description precise & complete?
- Is it possible to solve the task without being physically there?
- Are the hints useful? Could they be improved by other media type (image?)
- Is the sample solution complete (includes measured values and approach)?
- Is the language appropriate for related grade students?
- Other improvements

Criteria for a MCM task I

- **Clarity:**

For each task, a **picture** must be created that allows the clear identification of the situation or the object the task is about.

- **Presence:**

The task can only be solved **on site**, i.e. the task data must be collected on site. This also means that the picture or the task description must not be sufficient to successfully solve the task.

- **Activity:**

The person who solves the task must be **active** and do something (e.g. measuring or counting).

Criteria for a MCM task II

- **Multiple solutions:**
The task should be solvable in **different ways**.
- **Reality:**
The task should be **application-oriented**, realistic and not too contrived.
- **Graduated hints:**
At least one **hint** should be added to each task.
- **School mathematics and „tags“:**
The task should have a clear relation to school mathematics: Use the prepared tags or add new **terms**. The task should also be assigned to a **class level**.

Criteria for a MCM task III

- **Solution formats:**

The solution of the task should be presentable as a solution interval (good and medium interval), as an exact number, as multiple choice or as a GPS task.

- **Tools:**

No special tools should be required to solve the task.

- **Sample solution:**

One should offer a solution and hints (only visible in the portal) for teachers.

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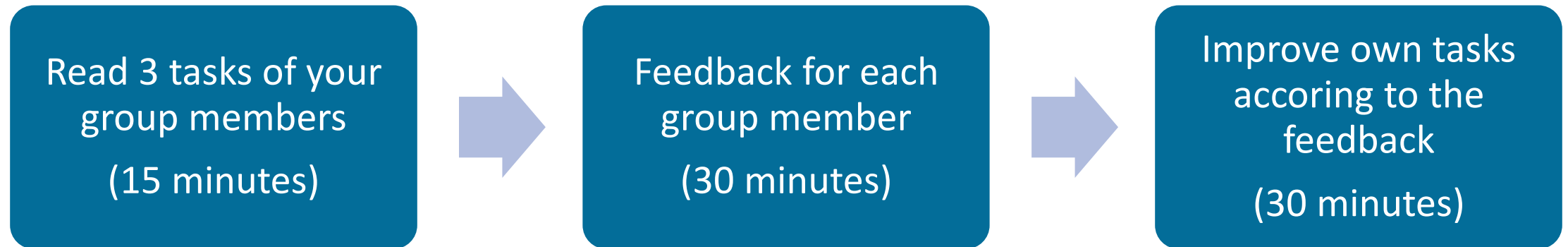
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Feedback and Improvements



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Review Systems

- MCM benefits from a growing community and a growing number of material
- These published tasks have to meet the standards of the idea behind MCM
- To guarantee this, all tasks have to go through a review process before they are published



Review Systems

- Reviewing processes are a common way to guarantee quality in science, literature or music (Connors, Mudambi, & Schuff, 2011)
- In academia, it “is the process by which experts in some discipline comment on the quality of the works of others in that discipline.” (Price & Flach, 2017, p. 70)
- Also in growing web communities, which allow users to produce and publish material, reviewing processes are necessary.

Review Systems - Wikipedia

- Wikipedia, an online encyclopedia, is an example for an online platform with over 40 million articles that anyone can create and modify (Brandes & Lerner, 2007).
- This amount of articles and authors does not allow a review of every edit and entry and asks for a complex review process.
- Exemplary review and protection elements used by Wikipedia are the storage of elder pages in case of edits, and the distribution of roles, e.g. reviewer or administrator, which allow particular actions on Wikipedia (Ferschke, 2014).

Review Systems – GeoGebra Tube

- GeoGebraTube, a platform with online material for the dynamic mathematics software GeoGebra, serves as an example for reviewing material in the context of mathematical education.
- The tool makes it possible to create and access material, e.g. worksheets, for the software.
- Currently, about one million files are available.
- In terms of quality, GeoGebraTube counts on editorial review, which rates excellent materials, and on user review (Gassner & Hohenwarter, 2012).

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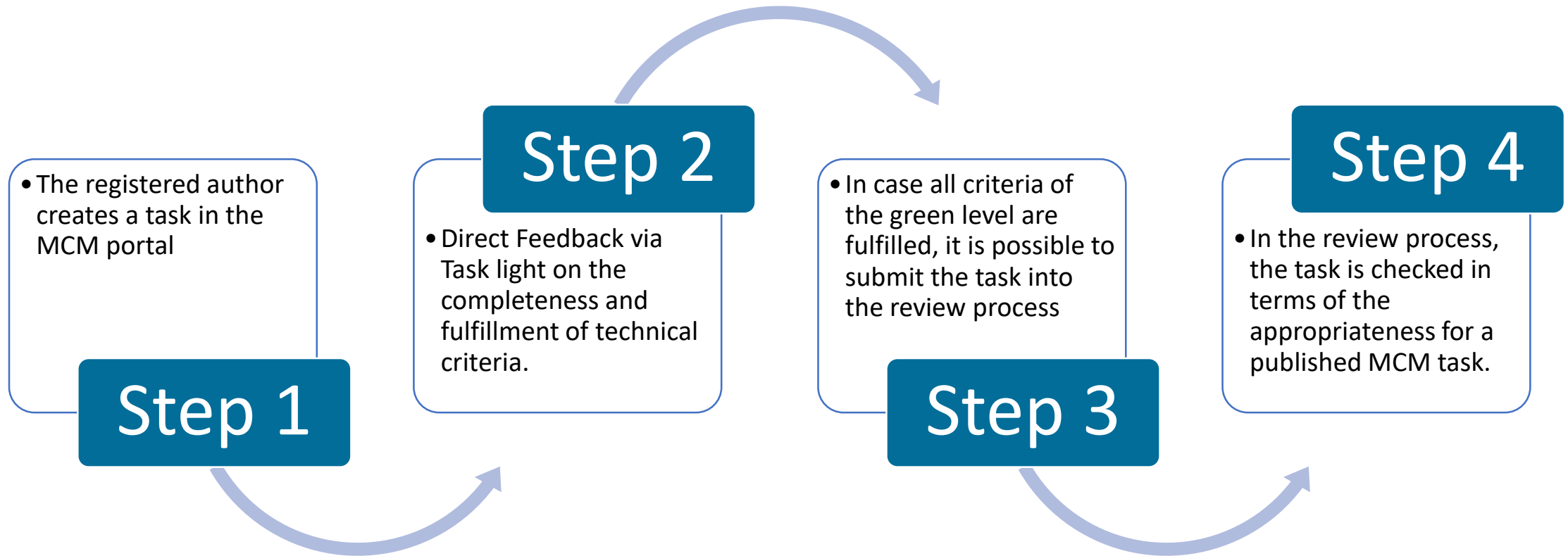
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The MCM Review Process



Task Light Example

Task lights

The task lights give information about the technical status of the currently selected task. Solely tasks that fulfill all technical requirements may be submitted to publication. These tasks are marked with a green light. Subsequently you will find all technical requirements.

Criteria - Green

- Clear image of the object
- Sample solution (text and / or image)
- At least 2 hints
- Tags (thematical keywords)
- Author
- Task title
- Definition of task
- Complete answer
- Clear position

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Example Review

- Have a look at the additional material
 - Task „Standing Stone“
 - Task „Cobbeled Stones“

and formulate a Review for both tasks.

Example Review

- Have a look at the additional material „Review – Example“
 - Task „Standing Stone“
 - Task „Cobbeled Stones“

and formulate a Review for both tasks.

Example Reviews

Waiting for review

The author of this content has requested publication. Please review the content and provide a feedback for the user.

[HIDE REVIEW FORM](#)

Your decision

Publish content (accept)

Content must be revised (decline)

Your feedback

Message *

Dear Manuel,

thanks a lot for creating this interesting task.

Best regards from Frankfurt
Simon Barlovits

Your feedback

Message *

Dear Zoe & Anna,

thanks for creating this task. However, I have some comments and kindly ask you to revise your task with regard to the following points.

1. Image:

Please upload another picture which is more sharpen. In addition, choose a picture that clearly illustrates the tasks situation.

2. Keywords:

The tag "volume" should be replaced by the keyword "area". In my opinion "counting" would be a suitable tag for your task, too.

3. Tools:

In my view, a wire isn't an appropriate tool in this case. In the 2nd hint you suggest that the students should use the folding ruler to count the stones on one square meter. That seems to be a good hint – so please replace the "wire" by the tool "folding ruler"

4. Sample solution:

To comprehend your approach, it is necessary to know your measured data. How did you calculate the area of 56m²? Please present your way of solution more detailed.

5. Interval

Your interval too narrow. If the students calculate an area of 54 m², their solution wouldn't fit into your interval – even if their approach was similar to your sample solution.

6. About this object:

Lastly, I ask you to remove your personal statement under "About this object".

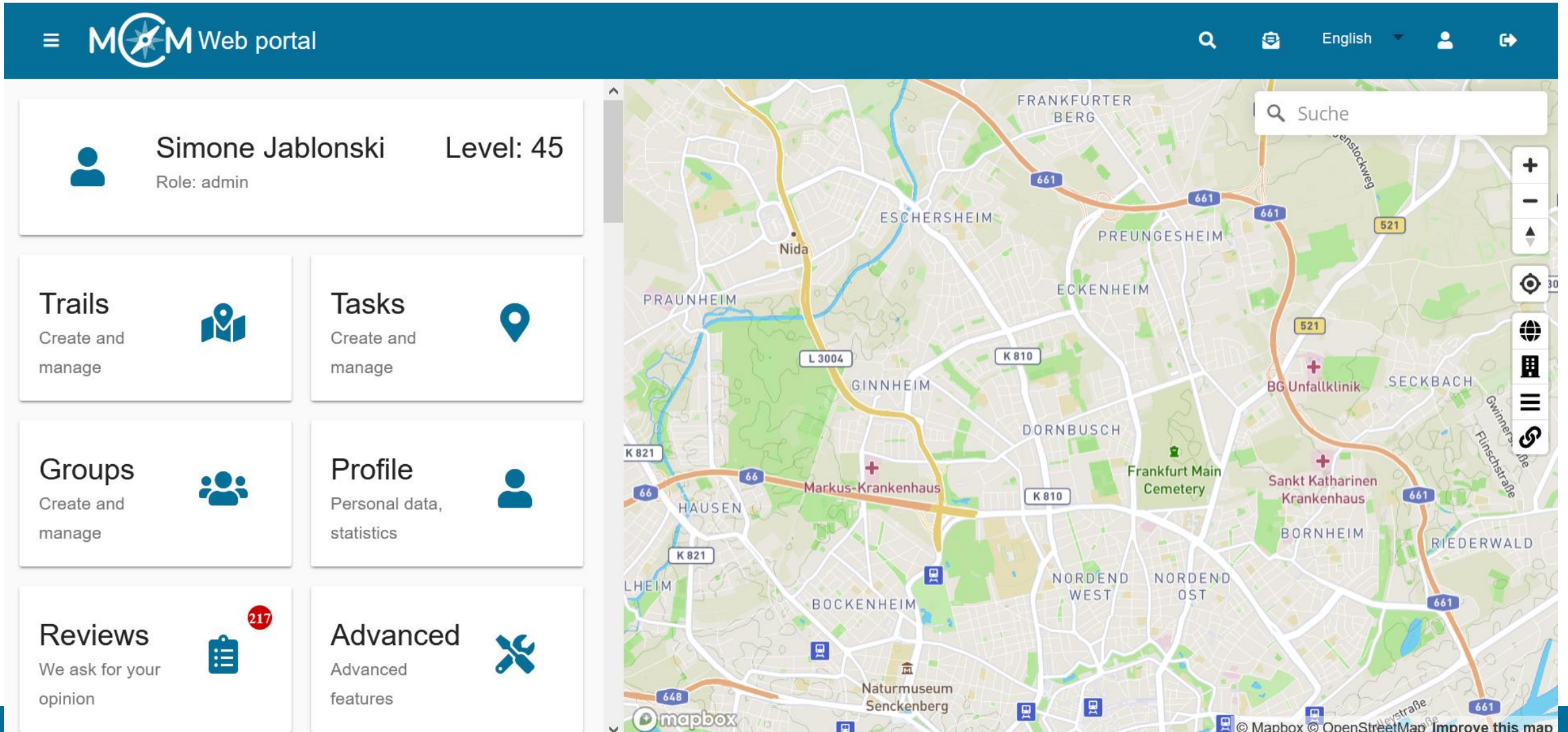
With all these remarks I do not want to discourage you, but rather help you to improve your task.

Best regards,
Simon Barlovits

Not it's your turn!

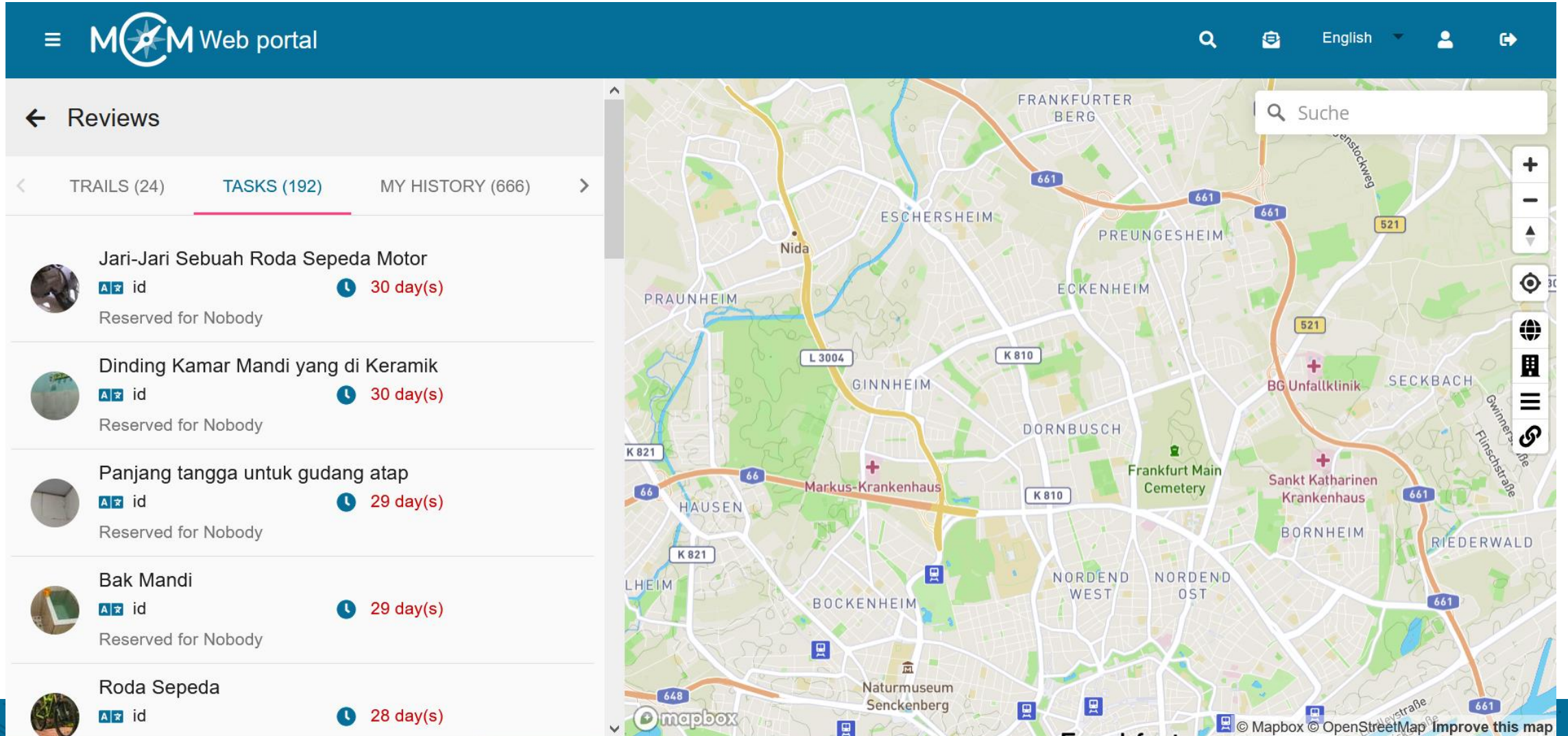
- Please have a look at the tasks in the additional material “Review Tasks”.
- Choose three out of them and formulate a review based on the criteria.

How to give Feedback in the MCM system



The screenshot shows the MCM Web portal interface. The top navigation bar includes the MCM logo, the text 'Web portal', a search icon, a language dropdown set to 'English', a user profile icon, and a share icon. The main content area is divided into two columns. The left column contains a user profile for 'Simone Jablonski' (Level: 45, Role: admin) and eight menu items: Trails, Tasks, Groups, Profile, Reviews (with a red notification badge showing '217'), and Advanced. The right column displays a map of Frankfurt, Germany, with various landmarks and districts labeled. The map includes a search bar with the text 'Suche' and a vertical toolbar with navigation and map control icons. At the bottom of the map, there is a 'mapbox' logo and copyright information for '© Mapbox © OpenStreetMap'.

How to give Feedback in the MCM system



The screenshot displays the MCM Web portal interface. The top navigation bar includes a menu icon, the MCM logo, and the text "Web portal". On the right side of the header, there are search, notification, language (English), user profile, and share icons.

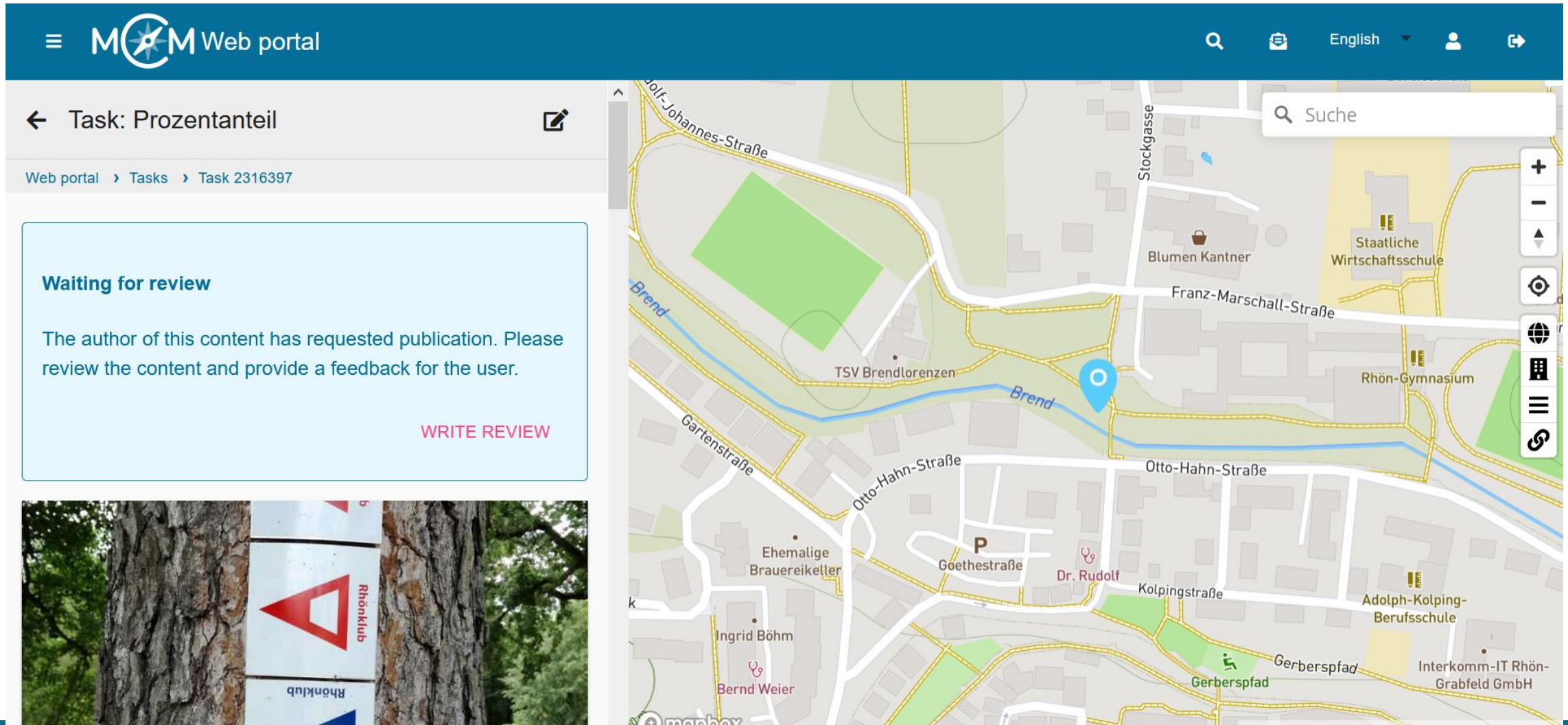
The main content area is titled "Reviews" and features a navigation bar with three tabs: "TRAILS (24)", "TASKS (192)", and "MY HISTORY (666)". The "TASKS" tab is currently selected.

Below the navigation bar, there is a list of five reviews, each with a profile picture, a title, a user ID, and a reservation status:

- Jari-Jari Sebuah Roda Sepeda Motor**
User: [ID] id
Reserved for Nobody
30 day(s)
- Dinding Kamar Mandi yang di Keramik**
User: [ID] id
Reserved for Nobody
30 day(s)
- Panjang tangga untuk gudang atap**
User: [ID] id
Reserved for Nobody
29 day(s)
- Bak Mandi**
User: [ID] id
Reserved for Nobody
29 day(s)
- Roda Sepeda**
User: [ID] id
28 day(s)

On the right side of the interface, there is a map showing a city area with various landmarks and roads. The map includes a search bar with the text "Suche", a zoom control panel, and a "mapbox" logo at the bottom left. The map shows several districts including Frankfurt am Main, such as Praunheim, Eschersheim, Preungesheim, Eckenheim, Ginnheim, Dornbusch, Hausen, Bockenheim, Nordend West, Nordend Ost, Bornheim, and Riederwald. Landmarks like Markus-Krankenhaus, Sankt Katharinen Krankenhaus, and BG Unfallklinik are also visible.

How to give Feedback in the MCM system



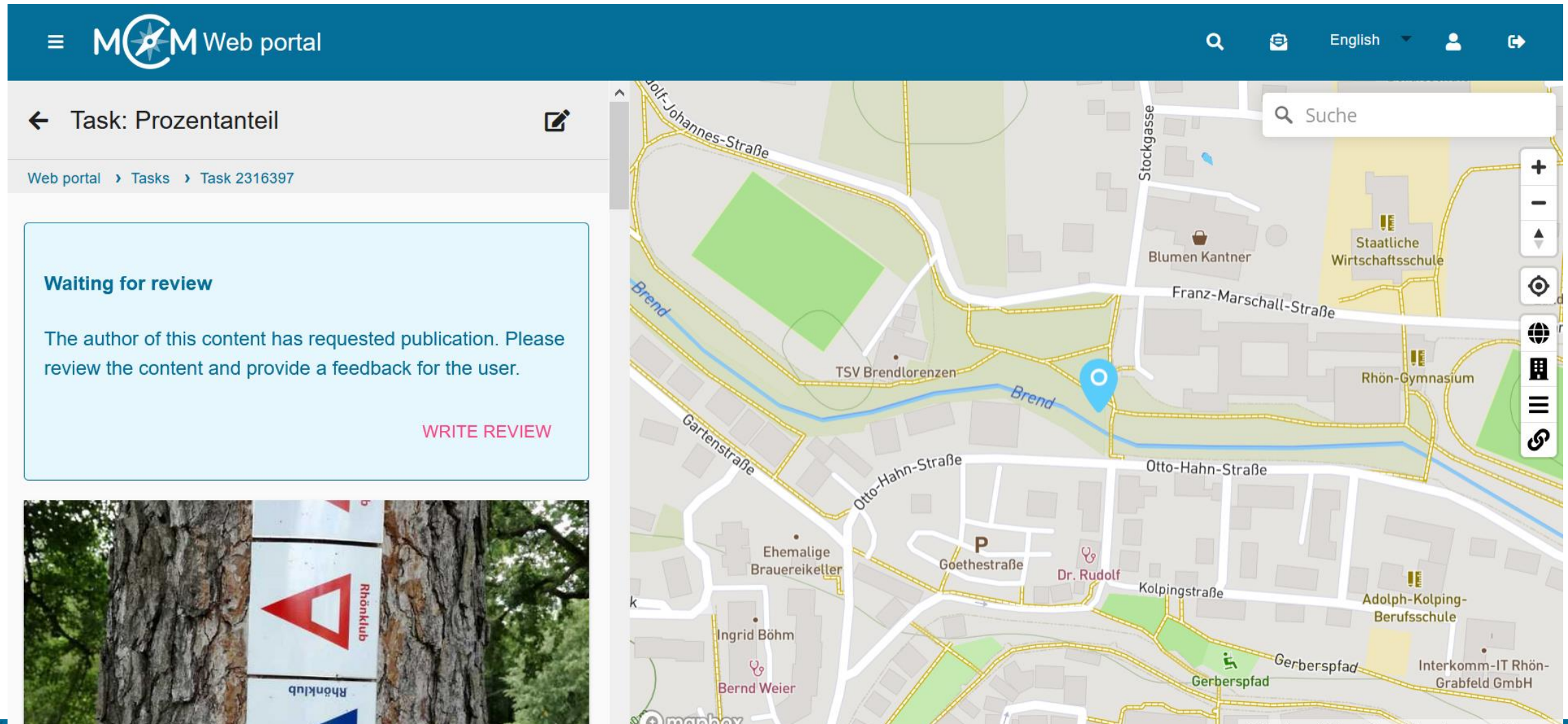
The screenshot displays the MCM Web portal interface. At the top, the navigation bar includes the MCM logo, the text "Web portal", a search icon, a language dropdown set to "English", a user profile icon, and a share icon. Below the navigation bar, the page title is "Task: Prozentanteil" with a back arrow and an edit icon. A breadcrumb trail shows "Web portal > Tasks > Task 2316397".

The main content area is divided into two sections. The upper section is a light blue box with the heading "Waiting for review". Below the heading, the text reads: "The author of this content has requested publication. Please review the content and provide a feedback for the user." A red "WRITE REVIEW" button is positioned at the bottom right of this box.

The lower section features a photograph of a red triangular sign with the text "Rhönklub" and a white sign with a red triangle and "Rhönklub" text, set against a background of tree trunks.

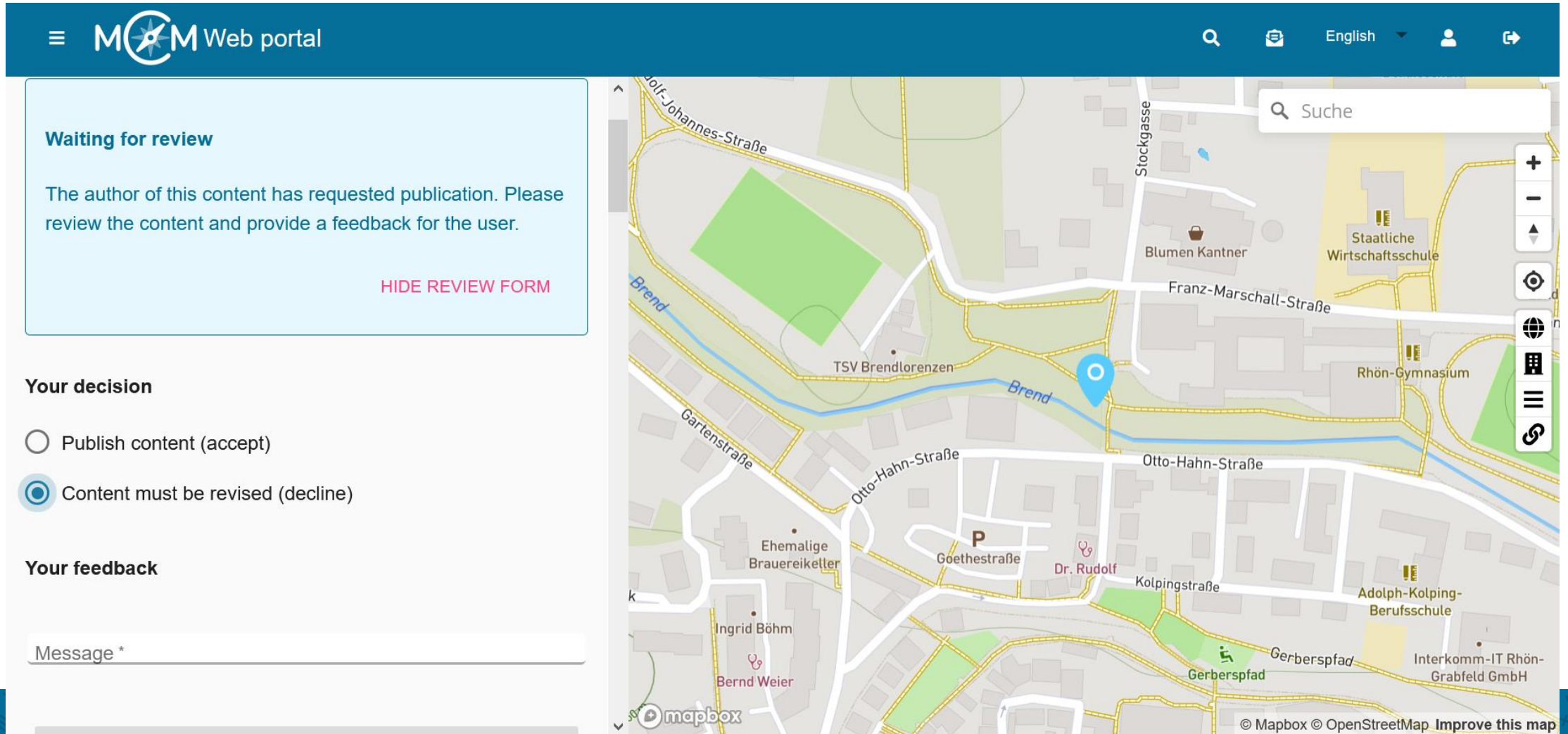
On the right side of the interface, a map is displayed. The map shows a street grid with labels such as "Brend", "Franz-Marschall-Straße", "Otto-Hahn-Straße", and "Goethestraße". A blue location pin is placed on the map. Various landmarks are labeled, including "TSV Brendlorenzen", "Blumen Kantner", "Staatliche Wirtschaftsschule", "Rhön-Gymnasium", "Adolph-Kolping-Berufsschule", and "Interkomm-IT Rhön-Grabfeld GmbH". The map is provided by mapbox.

How to give Feedback in the MCM system



The screenshot displays the MCM Web portal interface. At the top, there is a navigation bar with the MCM logo and 'Web portal' text. Below this, the page title is 'Task: Prozentanteil'. A breadcrumb trail shows 'Web portal > Tasks > Task 2316397'. A light blue box contains the text 'Waiting for review' and 'The author of this content has requested publication. Please review the content and provide a feedback for the user.', with a 'WRITE REVIEW' button. Below the text is a photograph of a red triangular sign with 'Rhönklub' written on it. To the right, a map shows a street grid with a blue location pin. Landmarks include 'TSV Brendlorenzen', 'Blumen Kantner', 'Staatliche Wirtschaftsschule', 'Rhön-Gymnasium', 'Adolph-Kolping-Berufsschule', and 'Interkomm-IT Rhön-Grabfeld GmbH'. The map is labeled with various streets like 'Brend', 'Franz-Marschall-Straße', and 'Otto-Hahn-Straße'.

How to give Feedback in the MCM system



MCM Web portal

English

Suche

Waiting for review

The author of this content has requested publication. Please review the content and provide a feedback for the user.

HIDE REVIEW FORM

Your decision

- Publish content (accept)
- Content must be revised (decline)

Your feedback

Message *

mapbox

© Mapbox © OpenStreetMap Improve this map

The screenshot displays the MCM Web portal interface. At the top, there is a navigation bar with the MCM logo, a search bar, and language selection (English). Below the navigation bar, a light blue box contains a notification: "Waiting for review" with the text "The author of this content has requested publication. Please review the content and provide a feedback for the user." and a "HIDE REVIEW FORM" button. To the left of the map, there are two sections: "Your decision" with radio buttons for "Publish content (accept)" and "Content must be revised (decline)" (which is selected), and "Your feedback" with a text input field labeled "Message *". The right side of the interface is dominated by a map showing a street grid with labels such as "Gartenstraße", "Otto-Hahn-Straße", "Goethestraße", "Kolpingstraße", "Gerberspfad", "Stockgasse", "Franz-Marschall-Straße", "Blumen Kantner", "Staatliche Wirtschaftsschule", "Rhön-Gymnasium", "Adolph-Kolping-Berufsschule", "Interkomm-IT Rhön-Grabfeld GmbH", "Ehemalige Brauereikeller", "Ingrid Böhm", and "Bernd Weier". A blue location pin is placed on the map. The map is powered by Mapbox and OpenStreetMap, as indicated by the footer.

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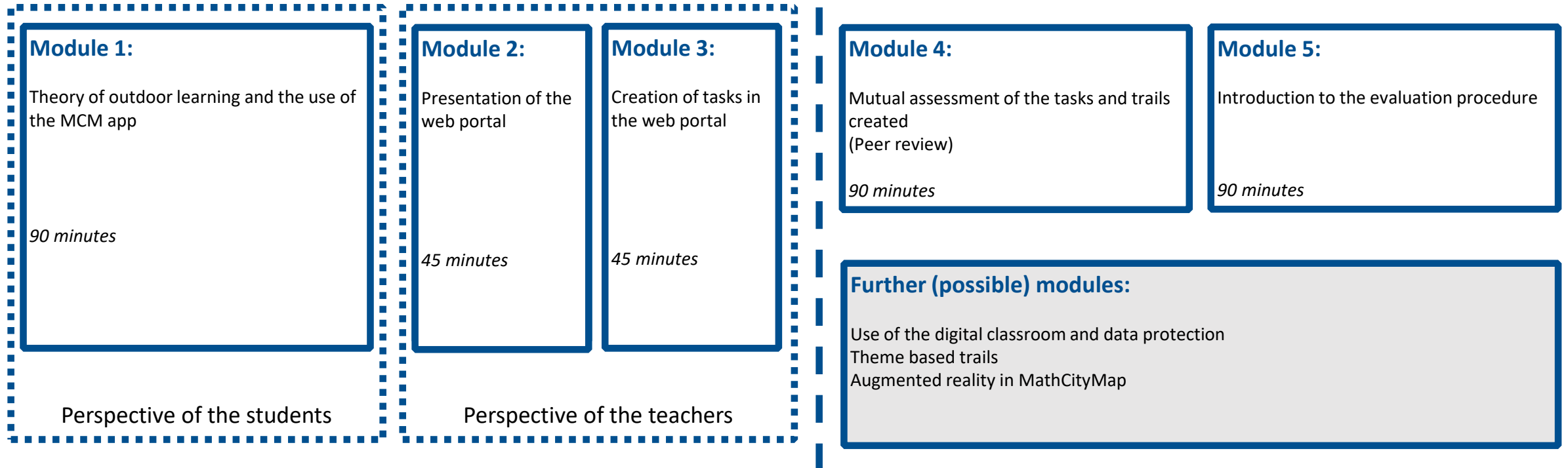
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Teacher trainings

Overview of the different modules



At least 2 weeks temporal distance
before creating your own tasks!

Interested in our trainings? Then get in touch with ludwig@math.uni-frankfurt.de!

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We look forward to have you on board!



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