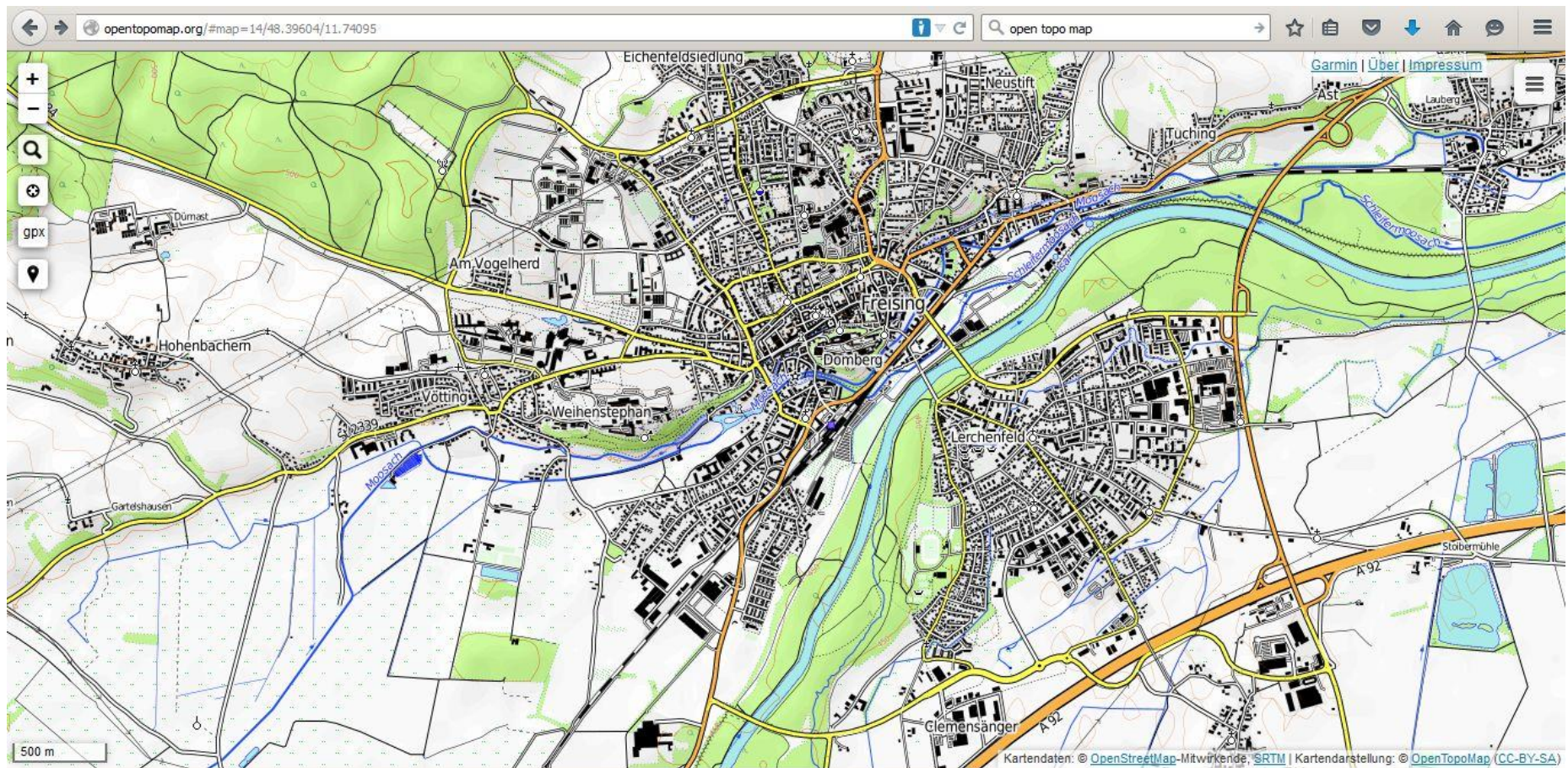# "Open Street Map" as a Problem Based Learning Project:

Opportunities to use and distribute to the free map of the world
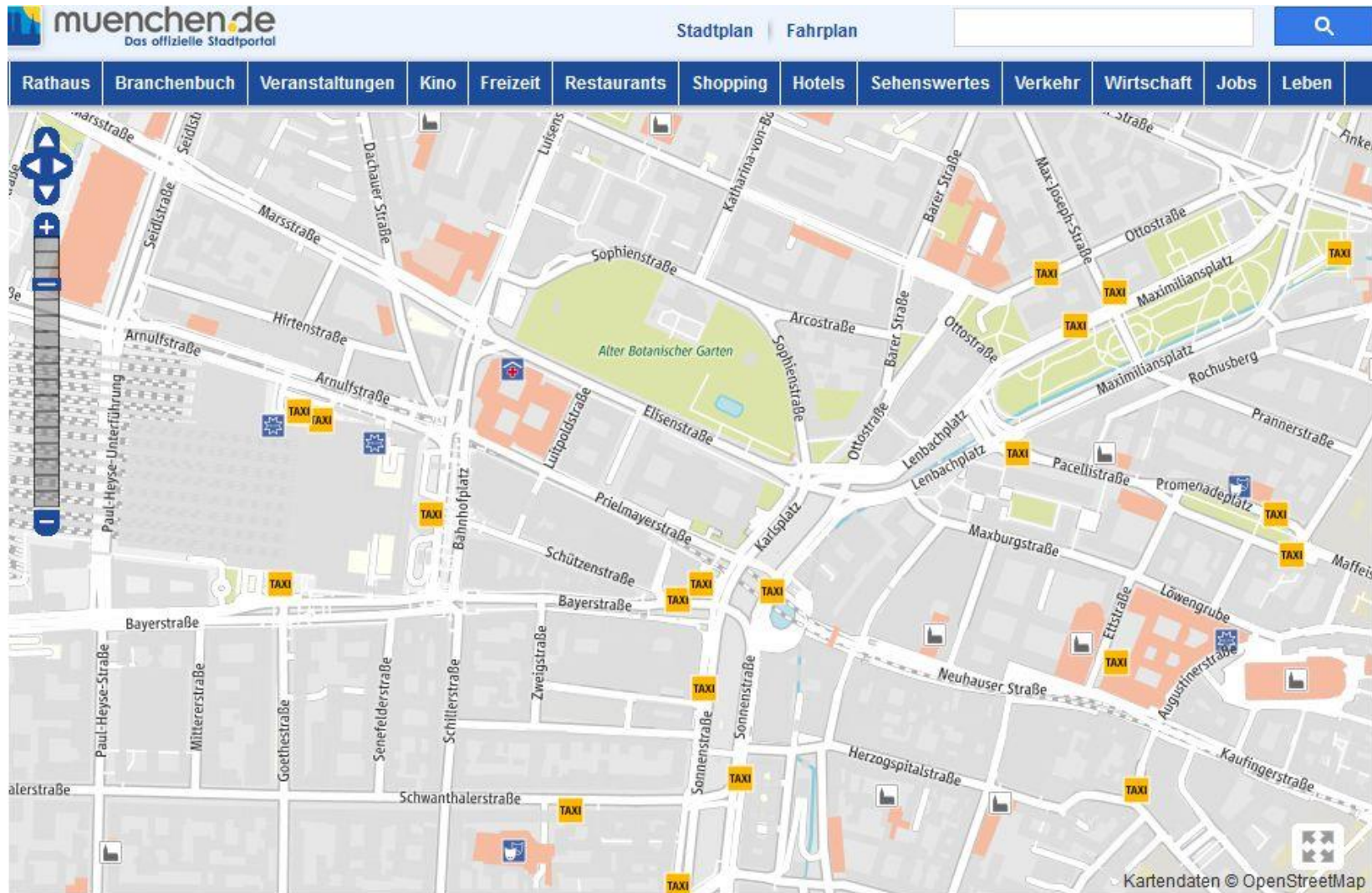
Prof. Dr. sc. techn. Ulrich Kias

High quality cartography: opentopomap.org *

* based on OSM data

Munich: OSM as official city map

IMLA: Students from all around the world

The sequence of learning in PBL as a learning circle
(according to BARROWS 2005)

» 1. Perception and analysis of the problem

» 2. Discussion with members of the learning group
Hypothesis building (ideas / assumptions)
Definition of learning targets

» 3. Self study / research phase
Enhancing existing knowledge

» 4. Discussion of results
Verification and modification of hypothesis

7 steps approach (University of Maastricht model)

Tutorial Group – Analysing a Problem (Steps 1 to	
1	**What does that mean?** "I do not understand what … means"
2	**What is it about?** "The most important sub-topics are …"
3	**What do you think?** "I suspect that …"
4	**What do we think together?** "These statements belong together under the term …"
5	**What are the learning goals?** "The most important open questions are ..." "For understanding this problem, we still need to work out/to find out/ answer/ learn about…"
Seeking information from learning resources	
6	**What answers do you get?** "These are my findings ..."
Synthesise and apply the new information	
7	**What is new, what has changed?** "That has changed ..."
8	**What has happened to me?** "Today I have learned …" "Next time I would do this different…"

Shortly clarify unclear terms in the group

Make an inventory of the sub-topics/sub-problems of the problem

Bring together what you already know

Start with your own experience and knowledge in order to bring clarification

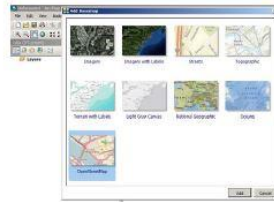Formulate **learning goals** using the *topics from the 4th step*

Work on understanding, explaining and solving the **learning goals** *from step 5*

Report on/Present the output of the **6th step**

Evaluate and reflect on the whole day

Division of students into 2 groups
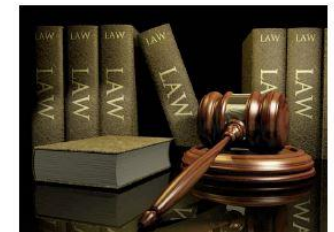

Use of Open Street Map
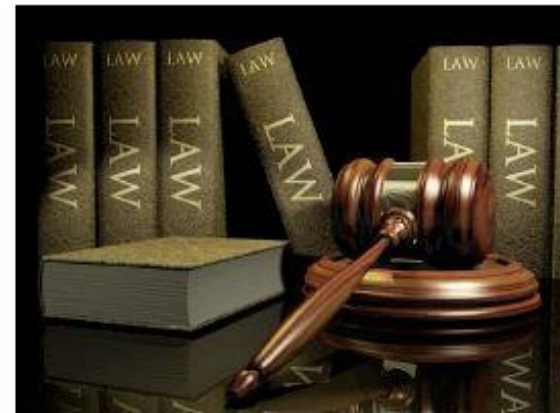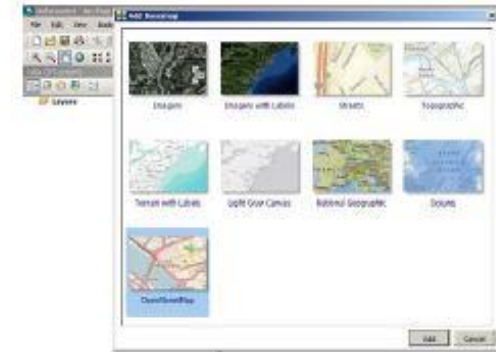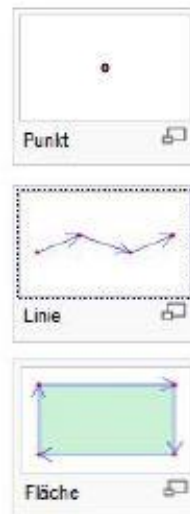

Contributing to Open Street Map

Use of Open Street Map

Contributing to Open Street Map

Punkt

Linie

Fläche

- Receivers

| < 100 € | ~ 1000 € | ~ 5000 € | > 10'000 € |
| 10 m | 5 m | < 1 m | < 1 cm |
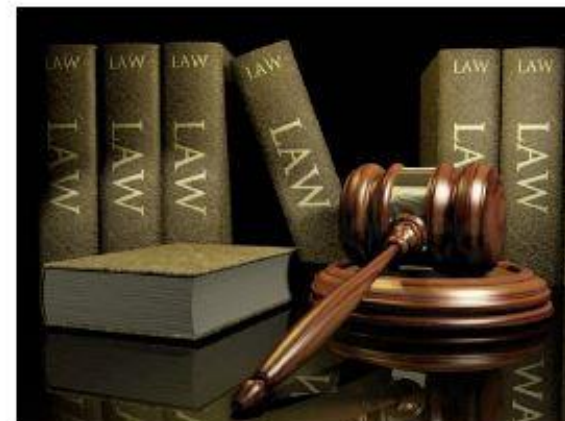
Group work in steps 1 - 5

1. step: "I do not understand what … means"

2. step: "The most important subtopics are …"

Brainstorming using cards and clustering

3. step: "I suppose that …!"

4. step: "What do we think together?"

Examples for learning questions (step 5)

Poster with working results

Poster with working results

Info market: rotating explanations

Info market: rotating explanations

Info market: rotating explanations

Closing the day: Reflection

» Which role could OSM play in my further career?

» Are there open questions left today?

» Are there any other abilities that I have learnt/improved today?

› Working under time pressure

› Working in groups

› Having to play a role

» Highlights? What would you change?