



# Mobile Classroom

*- Mobile Learning with Moodle -*

Ilias Lazaridis

*eLibera*

Andreas Forstinger

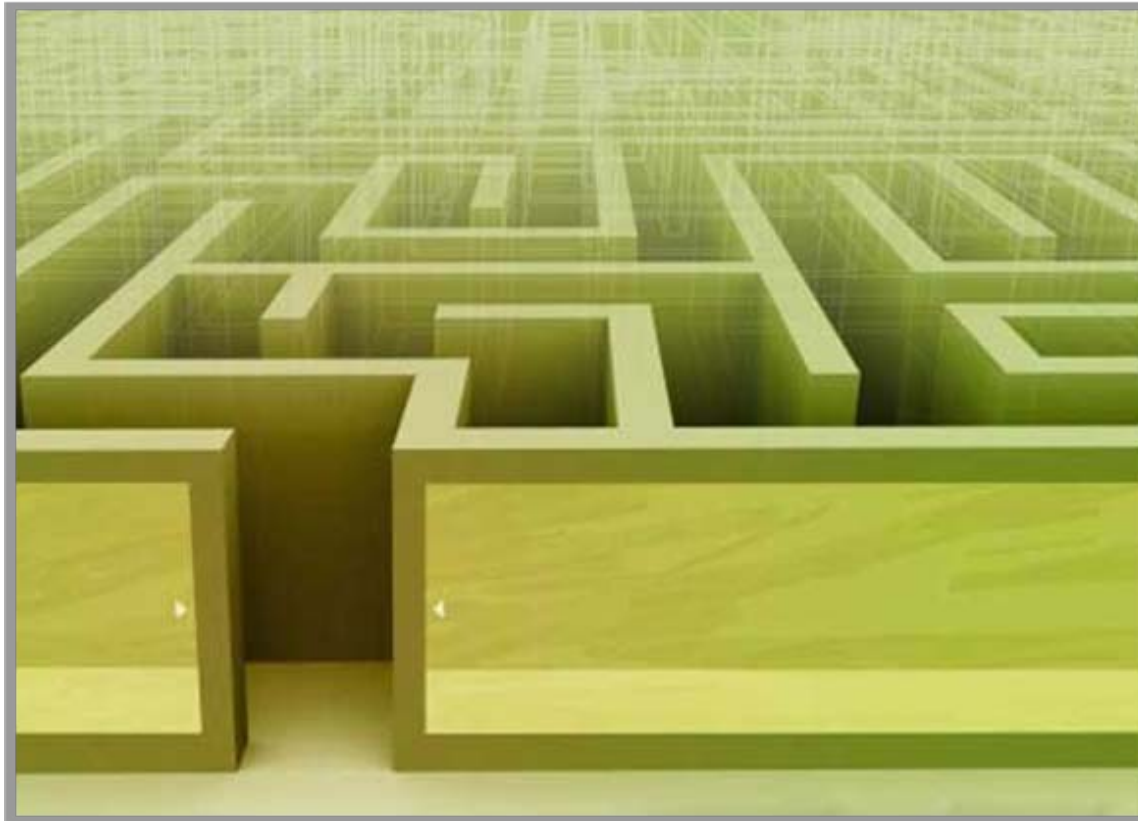
*muevo*

Sandra Schadenbauer

*FH JOANNEUM*

- Mobile Learning
- Mobile Learning Engine (MLE)
- Mobile Moodle (momo)
- Mobile Classroom Evaluation
- Mobile Game Based Learning (GPS)

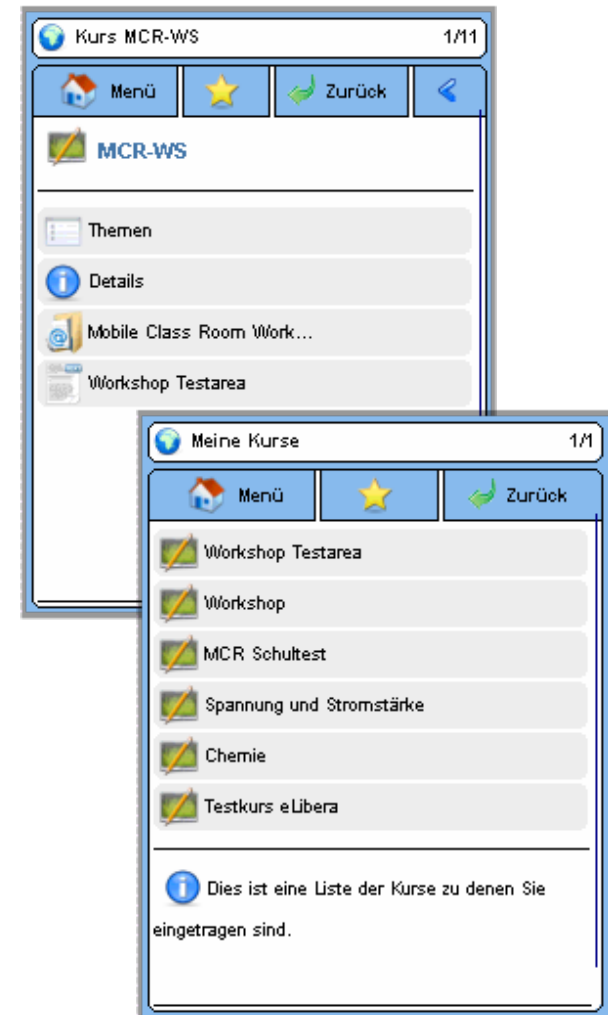




- j2me based Application for mobile phones
- Idea
  - Visualisation
  - Interactivity
  - Availability
  - Costs



- content
  - ~ text, pictures, audio, video
- communication
  - ~ built-in communication center
- extensibility
  - ~ plug-in architecture
  - ~ framework for enhancements

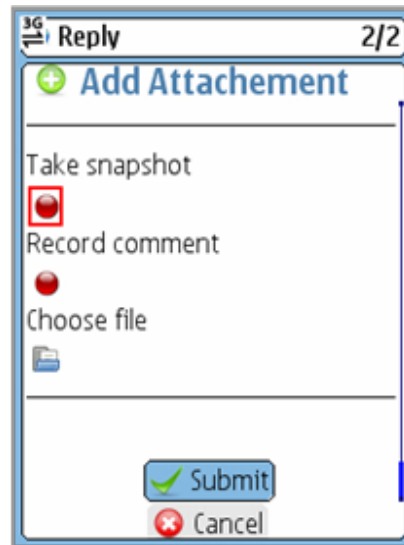
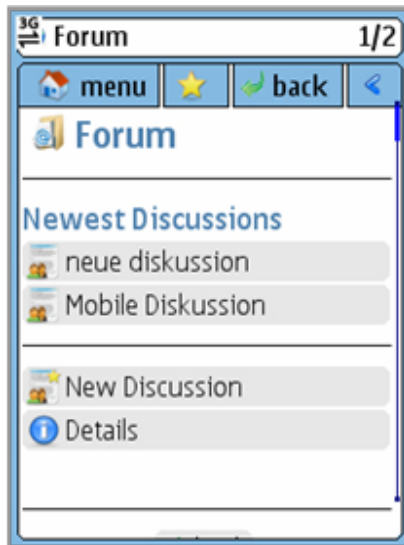


- |   |  |
|---|--|
| ~ optimized presentation and handling                               | ~ html is optimized for the PC                         |
| ~ high transfer rate using an optimized protocol and packed content | ~ each single resource has to be downloaded separately |
| ~ online/offline browsing   | ~ only online browsing                                 |
| ~ audio and video is directly integrated                            | ~ external audio and video application is necessary    |
| ~ advanced interactivity  | ~ limited interactivity                                |
| ~ easy enhancements (e.g own plug-ins)                              | ~ no enhancement of html possible                      |

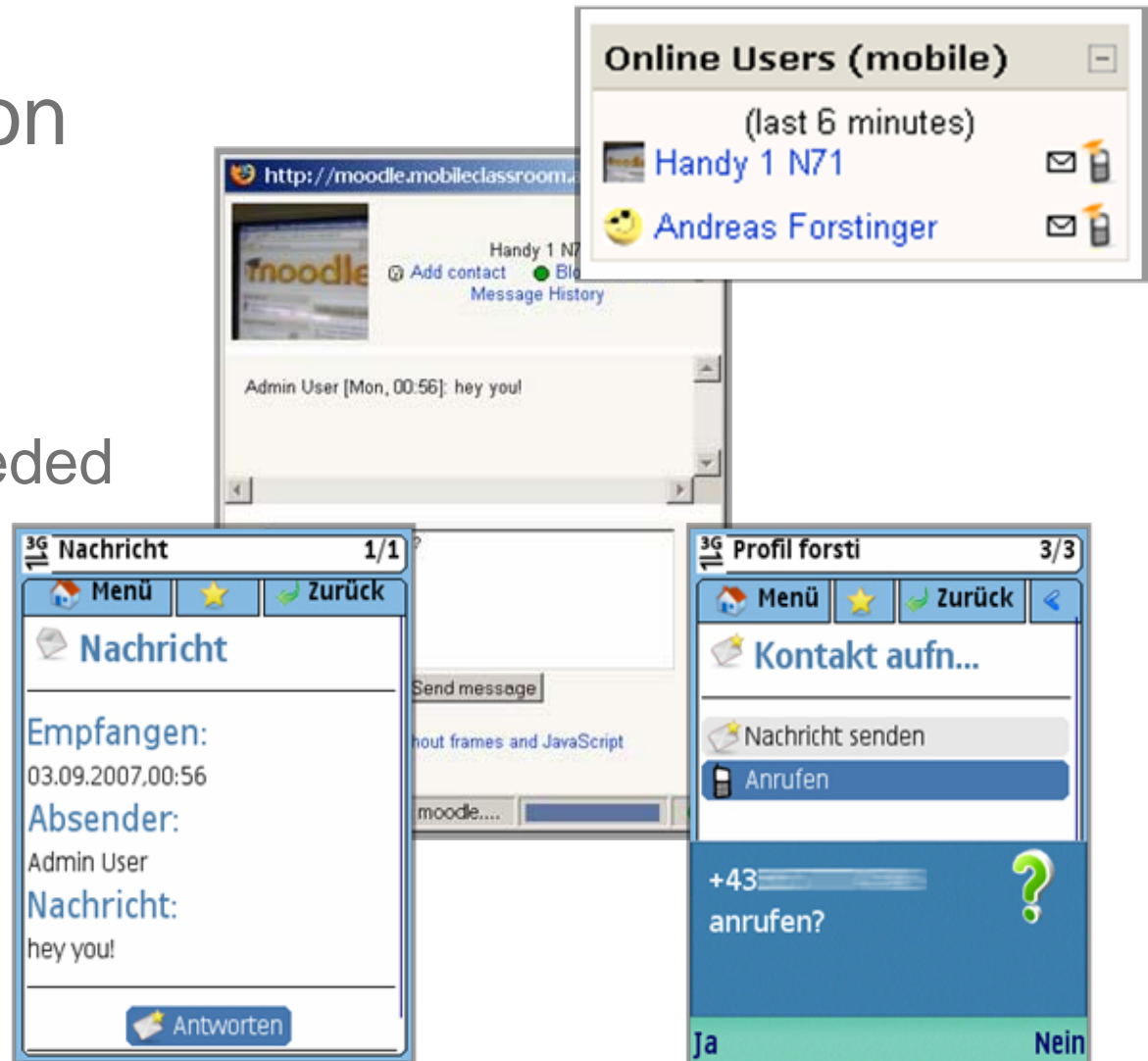
- Seamless Integration
  - administration
  - authentication
  - content creation
- Mobile Access
  - courses, activities, resources
  - optimized experience
  - decreased traffic (costs)



- Mobile Content Creation
  - Take photographs
  - Record audio & video
  - Directly upload to forum



- Communication
  - Messaging
    - free
    - No SMS needed
  - Voice calls



- Location Based / Context Based Learning
  - Semacode Integration
  - [www.semacode.org](http://www.semacode.org)
  - Mobile Tagging
  - „Object Hyperlinking“
- Offline Learning Objects
  - Interactive learning materials
  - quizzes



[www.mobileclassroom.at](http://www.mobileclassroom.at)

- PÄDAK Graz Hasnerplatz
  - Secondary school
  - class of 15 students aged ~12 years
- Evaluate new didactical possibilities
  - support investigative learning
  - multimedia authoring
  - context based scenarios
  - integration in class education



## ■ „Linked“ Learning Materials

The screenshot shows a web interface for a 'mobile class room'. The main content area displays the course title 'Spannung und Stromstärke' and a lesson titled '1 Konstantan 0,35mm'. Below the title is a photograph of a laptop displaying '2,84V' and '8,11A' next to a circuit setup. A large QR code is overlaid on the right side of the screenshot. The interface includes a sidebar with navigation options like 'Administration' and 'Kursbereiche', and a top navigation bar with 'MCR Volt und Ampere'.

The handwritten lab sheet is titled 'Spannung - Stromstärke - Widerstand'. It features a circuit diagram with a power source, an ammeter, a voltmeter, a resistor, and a switch. Below the diagram is a table with the following data:

Spannung	Stromstärke	Widerstand
2,03 V	0,37 A	5,46 Ω
2,38 V	0,36 A	6,61 Ω
2,84 V	0,36 A	7,89 Ω
3,29 V	0,36 A	9,14 Ω
3,80 V	0,36 A	10,56 Ω
4,30 V	0,36 A	11,94 Ω
4,80 V	0,36 A	13,33 Ω
5,30 V	0,36 A	14,72 Ω
5,84 V	0,36 A	16,11 Ω
6,38 V	0,36 A	17,47 Ω
6,91 V	0,36 A	18,89 Ω
7,44 V	0,36 A	20,28 Ω
7,97 V	0,36 A	21,67 Ω
8,50 V	0,36 A	23,06 Ω
9,03 V	0,36 A	24,44 Ω
9,56 V	0,36 A	25,83 Ω
10,09 V	0,36 A	27,22 Ω
10,62 V	0,36 A	28,61 Ω
11,15 V	0,36 A	30,00 Ω
11,68 V	0,36 A	31,39 Ω
12,21 V	0,36 A	32,78 Ω
12,74 V	0,36 A	34,17 Ω
13,27 V	0,36 A	35,56 Ω
13,80 V	0,36 A	36,94 Ω
14,33 V	0,36 A	38,33 Ω
14,86 V	0,36 A	39,72 Ω
15,39 V	0,36 A	41,11 Ω

Below the table is a graph showing the relationship between voltage and resistance, with a curve that appears to be a hyperbola. The x-axis is labeled 'Widerstand' and the y-axis is labeled 'Spannung'.

- Student Experiments
  - Instructions via Moodle
  - Multimedia Protocols
    - Enhance media competence
  - Offline Learning Objects (quiz)



- Diploma Thesis
- Location Based Learning
- Easy setup all within Moodle



# GPS Areas (1)

Geographic - Physik - Start - Editing GPS Area - Mozilla Firefox

www.mobileclassroom.at/moodle18/course/mod.php?update=455&return=true&sesskey=SMQGDjUHGv

Update Roles

description.  
3. you have to avoid overlaps of gps areas (from all courses).

Search place Remove last point Remove Area

Karte Satellit Hybrid

**GPS Areas**

- Aufgabe 02 - Stromkreis (current GPS Area)
- Hinweis zu Aufgabe 5
- Hinweis zu Aufgabe 6
- Aufgabe 07 - Mondstaub
- Info 09 - Induktion
- Aufgabe 04 - Licht
- Hinweis zu Aufgabe 3
- Info 04 - Ladung
- Info 06 - Mond (1)
- Ring um Spielfeld

**GPS Areas of other courses**

- FH JOANNEUM (from Course 'Testkurs Nischelwitzer')
- Jakominiplatz (from Course 'Open Test Course')

Name Aufgabe 02 - Stromkreis

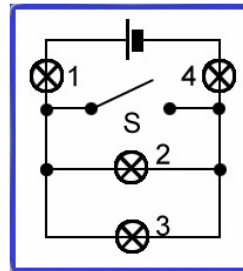
Description

Fertig

3

## Aufgabe 2 - Stromkreis

### Aufgabe



Im Stromkreis befinden sich vier baugleiche Lampen, eine Stromquelle und ein Schalter.

Welche Lampen leuchten wenn der Schalter geschlossen ist?

- a) es leuchten alle Lampen [KA]
- b) die Lampen 1 und 2 leuchten [FE]
- c) die Lampen 1 und 3 leuchten [RO]
- d) die Lampen 1 und 4 leuchten [EU]
- e) die Lampen 2 und 4 leuchten [IM]
- f) die Lampen 3 und 4 leuchten [TO]

Poste die Antworten ins Teamforum.

### Lösung

Antwort d ist richtig, es leuchten die Lampen 1 und 4. Die Lampen 2 und 3 werden durch den geschlossenen Schalter S überbrückt.

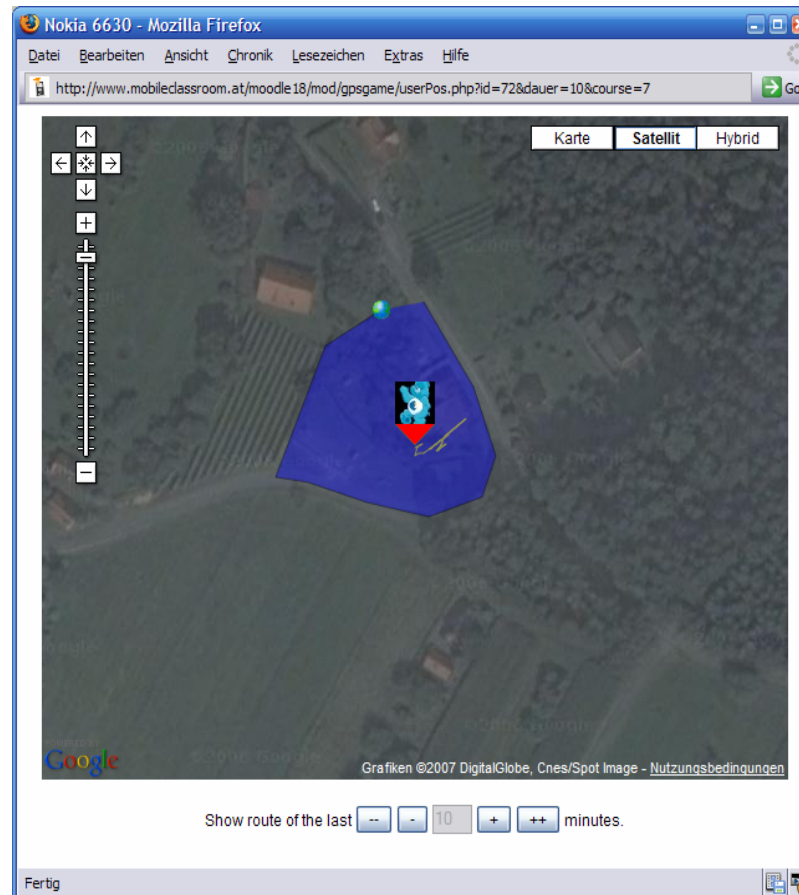
### Ressourcen

- Aufgabe 02 - Stromkreis
- Aufgabe 02 - Stromkreis

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### Hinweis zu Aufgabe 2

Der Teufel gibt einen Hinweis zum Versteck von Aufgabe 2



- Project Coordinator:
  - FH-Prof. DI Dr. Alexander Nischelwitzer
  - [alexander.nischelwitzer@fh-joanneum.at](mailto:alexander.nischelwitzer@fh-joanneum.at)
- Project Supporters:





# Thank you for your Attention!

Further information:

[www.mobileclassroom.at](http://www.mobileclassroom.at)

contact@mobileclassroom.at