



PARTNER: UMK Torun

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Minutes from PM02 – Work Package 4 Workshop in Torun

VERSION: B

Project meeting 02 - Workshop for WP4 Low-Tech Minds-On Kit

Participants

V. Engstrøm (Simplicatus), W. Peeters (Uni Antwerp), M. Michelini and L. Santi (Uni Udine), G. Rath (Uni Graz), J. Trna (Uni Brno), T. Kosicki (VIII Liceum Torun), J. Turło, A. Karbowski and G. Karwasz (UMK).

Decisions

WP4.4 The budget for low-tech kits was allocated as follows:

- €9 900 Subcontracting costs for WP3 high-tech
 - Development of USB probe Resistivity 4-point measurement
 - Development of USB probe Hall effect
- €30 000 Other costs for WP4 low-tech kits
 - € 1 000 – Pre-prototype Torun
 - € 20 000 – Contents of prototypes
 - € 5 000 – Packaging up to 100 prototypes at €50 each
 - € 4 000 – Shipping (10 packages * €400 postage)

WP4.5 Between 50 and 100 prototypes will be produced, at an average price of €200 to €400.

WP4.6 The partners presented and discussed a range of specific experiments, relating these to learning paths and conceptual knots. It was agreed that the selection of experiments must be based on the pedagogical considerations described in the support materials – close collaboration with WP6 is needed. Preliminary films of some experiments were made by UMK and U of Antwerp, who also discussed practical details and technical solutions.

WP4.7 The selection of experiments should also as much as possible, complement the contents of the online learning modules, in order to provide experimental versions of the animations. When real experiments are not included in the low-tech kit, preferably videos should be made of these. Some bugs in the online modules were detected. The partners will report these using the bug report feature.

WP4.8 Based on the discussion, the partners prepared a list of WP4 Low-tech units with thematic groups of experiments. For further details, see annexes in the File Repository).

- Unit 1 - Conduction of different materials
- Unit 2 - Conduction and temperature
- Unit 3 - Permanent magnets
- Unit 4 - Magnetism of different materials
- Unit 5 - Magnetism and temperature
- Unit 6 - Electromagnetism
- Unit 7 - Lorentz force
- Unit 8 - EM Induction
- Unit 9 - Connection to high-tech kit

WP4.9 The WP4 leader updates the preliminary list of materials and all partners will check local prices, if lower than on the list. The WP leader is responsible for cost estimates and finding suppliers. Soliton



will make market research. The partners will study scientific equipment catalogs from Italy, Poland, USA and Germany.

WP4.10 The partners discussed and distributed tasks, set deadlines and agreed on the structure of the further work. Tasks and deadlines, in chronological order:

- ASAP UMK orders sample materials
- 2008-03-10 UMK receive sample materials
- Production of the boxes:
 - Udine, sending box by 2008-03-10.
 - Brno, sending box by 2008-03-10.
 - Antwerp, sending box by 2008-03-10.
 - UMK starts prototypes by 2008-03-25.
 - UMK writes to GEOMAG by 2008-04-01.
 - Soliton finishes the market research by 2008-04-01..
- 2008-04-10 UMK copies examples, sends for evaluation to UD, Wim, Brno
- 2008-03-15 WP leader travels with prototypes to Brno – Grazd – Udine
- 2008-04-26/28 PM04 Workshop in U Antwerp
- 2008-05-01 Partners supply minimum descriptions of experiments/activities
- 2008-05-04 Partners give final OK on contents to UMK
- 2008-05-01 – 2008-06-01 Soliton orders materials
- 2008-06-01 Confirm general layout of English version of support materials
- 2008-06-01 WP4 preparation of prototypes stops
- 2008-06-01 – 2008-09-01 UMK produces 50 copies
- 2008-06-30 Partners send own, existing descriptions of experiments, change copy materials
- 2008-09-02 Low-tech kits are dispatched to partners
- 2008-09-01 – 2009-01-31 Testing kits in schools where compatible with curriculum
- 2008-06-01 – 2009-01-25 All partners develop:
 - 1 teacher training seminar
 - 1 cycles of lessons in testing schools
- 2008-11-20 Partial evaluation of the materials by some partner for Interim Report
- 2009-02-01 New workshop, if possible, to evaluate preliminary educational outcome
- 2009-04-01 Work on revising kits based on the testing/feedback begins

WP4.11 Further documents will be uploaded to the Project Intranet and discussed in the Forum.

WP4.12. Translations of the description material – national reference persons will decide the extent of the translation, which is necessary for teachers deadline 2008-09-01. National reference group will check national language versions by 2008-10-01.

WP4.13 The WP leader discusses with the Evaluator about connections with WP8.