DynaMAT

Feedback and improvement suggestions for courses – report of AT team

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Course materials

1. Best spot – investigations with circles
2. Euclidean Eggs
3. The tall tree (+ GeoCaching)
4. Art and photography
5. Fractals
6. Dynamical simulation using Excel
7. GPS – Geometry in the landscape
8. Geometry on the Playground
9. Geometry on Car Wheels

Course 1: description

- Pre-service teacher seminar
- Duration: 12x1.5 hours
- Participants: 33 pre-service teachers
- Students had DynaMAT materials (and others) from all partners to choose from
- March 5 – June 25, 2013

Course 1: quantitative feedback

- n = 33, 25 female + 8 male
- How did you like the course: ø 3.8 of 4
- How did you like E-Learning part: n/a
- Was the material adequate: ø 3.7 of 4
- Encouragement to engage: ø 3.9 of 4
- Materials
  - GPS – geometry in the landscape: ø 3.6 of 4
  - Geometry on the playground: ø 3.5 of 4
  - Geometry on carwheels: ø 2.5 of 4

Course 1: qualitative feedback 1/2

- GPS – geometry in the landscape:
  - Very practical, tried it ourselves at home
  - Difficult with SmartPhone
  - In school: Going outdoor is difficult, alternative?
- Geometry on the playground:
  - Very good, can try this on school grounds
  - Most kids have phones with cameras
  - Different levels of geometry (2D/3D) makes it hard to place it in the curriculum -> divide it into two different units

Course 1: qualitative feedback 2/2

- Geometry on carwheels:
  - Clear instructions, easy to follow
  - Maybe not interesting for many female kids
  - “Bus problem” not very realistic
  - Add other symmetrical objects, so that it is not reduced to car wheels
  - Also add “inscribed circle” for polygons

Course 2: description

- Pre-service teacher seminar
- Moodle course
- Duration: 11x1.5 hours
- Participants: 20 pre-service teachers
- Exclusively DynaMAT materials from all partners
- Video recorded, videos are on Moodle
- March 5 – June 25, 2013

Course 2: quantitative feedback 1/2

- n = 20, 13 female + 7 male
- How did you like the course: ø 3.9 of 4
- How did you like E-Learning part: 3.8 of 4
- Was the material adequate: ø 3.3 of 4
- Encouragement to engage: ø 3.9 of 4

Course 2: quantitative feedback 2/2

- Materials
  - Best spot – investigations with circles: ø 3.9 of 4
  - Euclidean Eggs: ø 3.8 of 4
  - The tall tree (+ GeoCaching): ø 3.9 of 4
  - Art and photography: ø 3.7 of 4
  - Fractals: ø 3.0 of 4
  - Dynamical simulation using Excel: ø 2.8 of 4
  - GPS – Geometry in the landscape: ø 3.7 of 4

Course 2: qualitative feedback 1/4

- Best spot – investigations with circles:
  - Very good material, easy to localize
  - Shows practical application of circles
  - Is the biggest angle the best viewpoint? What if angle = 170°?
  - Good: Teacher notes
- Euclidean Eggs:
  - Very original, I never thought about how to create an egg!
  - Finally: GeoGebra is not only triangles …
  - Please give us the GeoGebra files

Course 2: qualitative feedback 2/4

- The tall tree (+GeoCaching):
  - Realistic problem, also in Vienna
  - Good to show the “hand made” solution, too
  - Different co-ordinate systems can be difficult for children
  - Google Earth in mathematics – great!
- Art and photography:
  - Finally art and mathematics!
  - Sometimes too detailed (GeoGebra instructions)
  - What can you do with it curriculum-wise? Give some hints, please

Course 2: qualitative feedback 3/4

- Fractals:
  - Good to show complex numbers are not only useful in electrical engineering
  - More interesting for bright kids, average students may have difficulty understanding this
  - Please explain more about what use Fractals are, aside from being pretty
  - Too complicated

Course 2: qualitative feedback 4/4

- Dynamical simulations using Excel:
  - Good and detailed instructions
  - A new use for Excel – not only drawing graphs
  - Maybe use colors to distinguish elements
- GPS – geometry in the landscape:
  - Tried it out in Vienna, works very well
  - A good combination between GeoGebra and Google Earth
  - Very good step-by-step instructions
  - Almost impossible without proper GSP receiver

Course 3: description

- Workshop for in-service teachers
- Duration: 2 hours
- Participants: 23 in-service teachers
- Teachers worked with materials available in German, using Moodle
- Date: April 5, 2013

Course 3: quantitative feedback

- n = 23, 18 female + 5 male
- How did you like the course: ø 3.8 of 4
- How did you like E-Learning part: ø 3.1 of 4
- Was the material adequate: ø 3.5 of 4
- Encouragement to engage: ø 3.9 of 4
- Materials
  - Aviation: ø 3.3 of 4
  - GeoCaching: ø 3.8 of 4
  - Euclidean Eggs: ø 3.9 of 4

Course 3: qualitative feedback 1/2

- Aviation:
  - Interesting GPS use
  - Good data analysis with GPS
  - Add a real example with train or bicycle (most students don’t fly)
- GeoCaching:
  - Using game in mathematics is a good approach
  - How do you manage going outdoors?
  - Good tasks!

Course 3: qualitative feedback 2/2

- Euclidean Eggs:
  - Though I haven't use GeoGebra much, I was able to follow and enjoy this lesson
  - Maybe add picture of egg into GeoGebra, then have students try to fit this egg as exactly as possible
  - Even difficult constructions were easy to follow
  - I will definitely try this with my students, they always ask me about "something else but triangles" anyway