Experiences on building bridges and minding the gaps

First year chemistry students rehearsing high school math with two online learning environments

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Student mobility, bridging gaps

High school

Bachelor

Gap

Master

Different backgrounds

Gap

International students

Student mobility

within EU

Nationally

Math

Tech students
Support Successful Student Mobility with MUMIE
Kertaa lukion matematiikkaa, osallistu 

Matikkajumppaan!

Lue lisää netistä ja tule jumpan neuvontaan tiistaisin ja torstaisin klo 12-13 kemian tekniikan talon atk-luokassa 2 (alkaen to 12.9.)

wiki.aalto.fi/display/matikkajumppa
facebook.com/matikkajumppa

Matematiikan ja systeemianalyysin laitos
Gym weeks

1. Numbers
   - Rational functions
     - MAA1
     - MAA7
   - Powers, roots
     - MAA1
     - MAB1

2. Polynomials
   - Exp & Log functions
     - MAA1
     - MAB2
   - Inequalities
     - MAA2
     - MAB8
   - Limits, continuity
     - MAA9
     - MAA8

3. Abs value equations
   - Equations
     - MAA1
     - MAA2
     - MAB1
     - MAB3

4. Trigonometric functions
   - MAA1
   - MAB8

5. Derivative
   - Integral
     - MAA10
Research Qs

- Students’ opinions
- Required resources
- Is the technology working
- Can students keep up
- Are the materials suitable
Needed workload, technology

- **Publicity**: 5 h
- **Setting up the course**: 15 h
- **Work**:
  - Guidance: 12 h
  - Materials: 200 h
  - Tech: 200 h

- **MUMIE**: 150 h
- **STACK**: OK
Students’ previous experiences, beliefs

High school grade

I learned to study independently in high school

I had computer-aided teaching in high school

I think, that it is important to study independently in the university

I think, that it is important to be able to study computer-aided in the university
How the materials were utilised?

I studied theories from MUMIE 86%

I made the MUMIE exercises 72%

I made assessed STACK exercises 86%

I used my old high school text books 58%

I visited the Gym Help Desk 43%

"Exercises on internet were handy for working when I had time for it."
General opinions on the materials

Using web e-materials is as easy as using printed

Using English material is as easy as using Finnish

I prefer e-materials over traditional ones

Using e-materials is better for learning than trad. ones

Help Desk must be available

“The materials were good and easy to understand.”
Opinions on MUMIE

I studied the theory on MUMIE before exercises

MUMIE theories were useful

MUMIE examples were useful

MUMIE exercises and answers were useful

Navigating the MUMIE content was easy

"MUMIE exercises need more explanations."
Opinions on STACK

It was easy to answer in STACK

There was enough guidance for writing the answers

The exercise feedback was useful

The STACK system and exercises were working well

Navigating the STACK content was easy
**General opinions**

Participating the Gym was useful for me

Gym-styled rehearsing before studies in university is useful

"It was good to practice integrals and derivative, since I hadn’t done math for three years."

"The Gym should continue all year round."

"I have good feelings about the Math Gym, because I believe it was useful for me."

"The Math Gym was very useful for me."

**Grade for Gym**

"Good idea! I’d like to see the Gym to continue."
Future Qs

- Real benefits
- More schools
- More students
- More countries
- Other subjects
- Effects on student mobility
- Localizing
- Comparison with other partners’ results
- Long term student observation
- Further testing