

# The effect of the use of online mathematics on final results

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# Who and what?

Students: Bachelor of Engineering: Architecture

First phase – second semester

Course: Calculus (Wiskundige Analyse)

Lectures: 2 times 2 hours / week (10 weeks)

Exercise sessions: 15 (in 13 weeks)

7 credits

# Course text

Calculus, R. Adams – C. Essex, Pearson

Whole book: 17 chapters

Online practicing system: Math XL

[www.mathxl.com](http://www.mathxl.com)

Specific to the book

# Why using Math XL ?

- Revision of basics
- Make students start working at the beginning of the semester
- Offer help with additional practicing exercises

# How using Math XL?

- **Homeworks**, quizzes and tests
- With **due dates**
- Exercises of study plan
- A lot of **review homeworks** at the beginning
- **Help me solve this**
- **View an example**
- **Similar exercises**

# How motivating the students?

- Explain and show the system in first lecture and first exercise session
- Opportunity to practice a lot
- Professor says so ...
- Final score of 9/20 can be increased to 10/20
- Not mandatory

# Who uses Math XL?

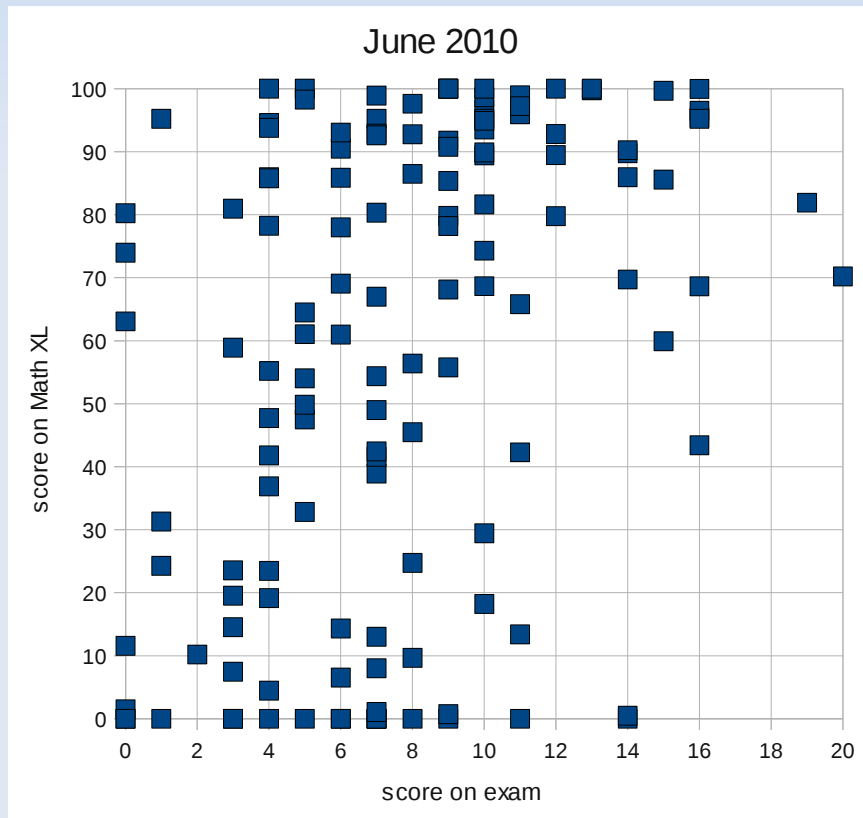
- 2009-2010
  - 161 students in course (list made in October)
  - 135 students in Math XL (start in February)
  - New professor with different approach
  - Second time students?
- 2010-2011
  - 162 students in course
  - 131 students in Math XL

# Use of gradebook

- Export data per student
- Compute average score of homeworks
- Results up till 'now'
- Results taken 'late'

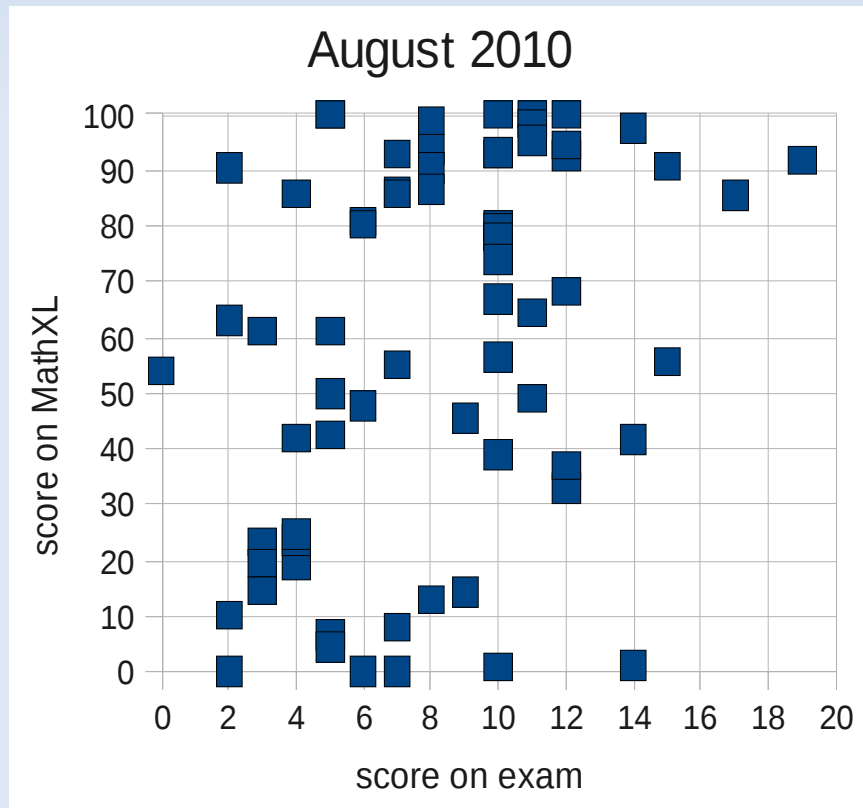


# Results of June 2010



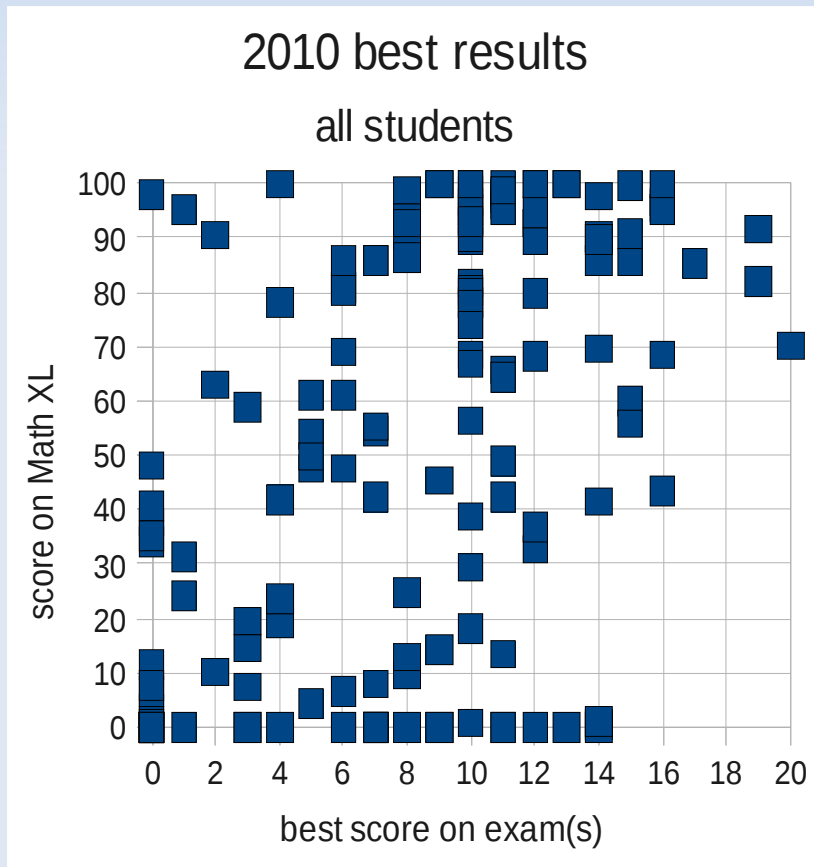
- 135 students (26 NA)
- scattered results
- “necessary but not sufficient condition”
- 9/20 increased to 10/20

# Results of August 2010



- 80 students (38 NA)
- scattered results
- “necessary but not sufficient condition”
- 9/20 increased to 10/20

# Best results of 2010

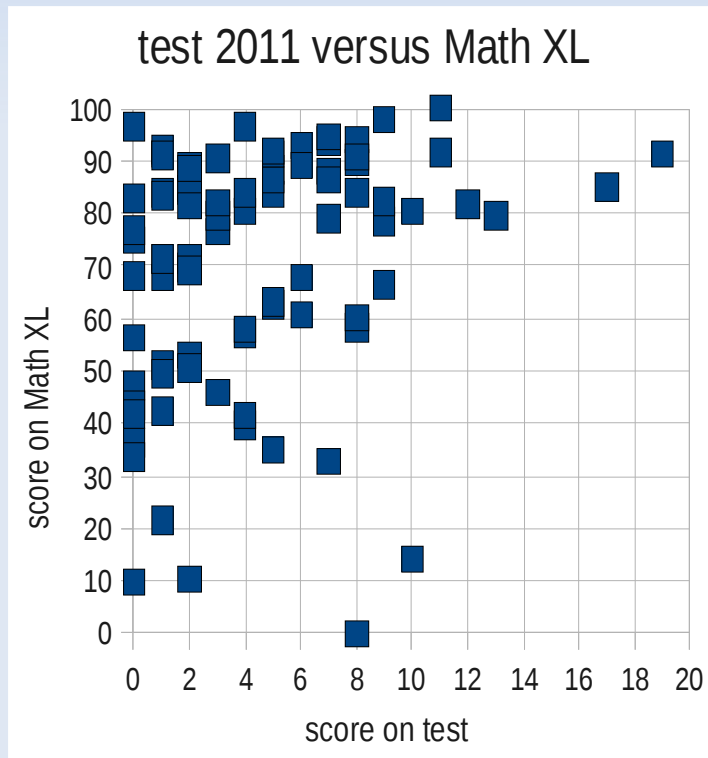


- 161 students
- no exam: score = 0
- no Math XL: score = 0
- limited correlation
- (0,100) no exam

# Gradebook 2011

- Several moments of checking students activity
  - Before Easter holiday (April 8)
  - At time of test (May 2)
  - At end of classes (May 27)
- Due dates adapted
- Better follow-up of activity

# Test 2011 versus MathXL



- 84 students
- both test and Math XL
- good results for Math XL
- test is not predictive for exam
- exams start on Friday

# Conclusions

- Limited correlation between score on exam and score on Math XL
- Seems necessary but not sufficient condition
- Convince students?
- Make it part of the exam?
- Limited data → more research for this year