



Ready or not?

Core competences for a successful first year

Joint staff training event - BME

Maarten Pinxten



International partners



Katholieke Universiteit Leuven (Belgium)



Technical University Hamburg-Harburg (Germany)
Prof. Christian Kautz



University of Žilina (Slovakia)
Prof. Peter Hockicko



Budapest University of Technology and Economics (Hungary)
Prof. Pal Pacher



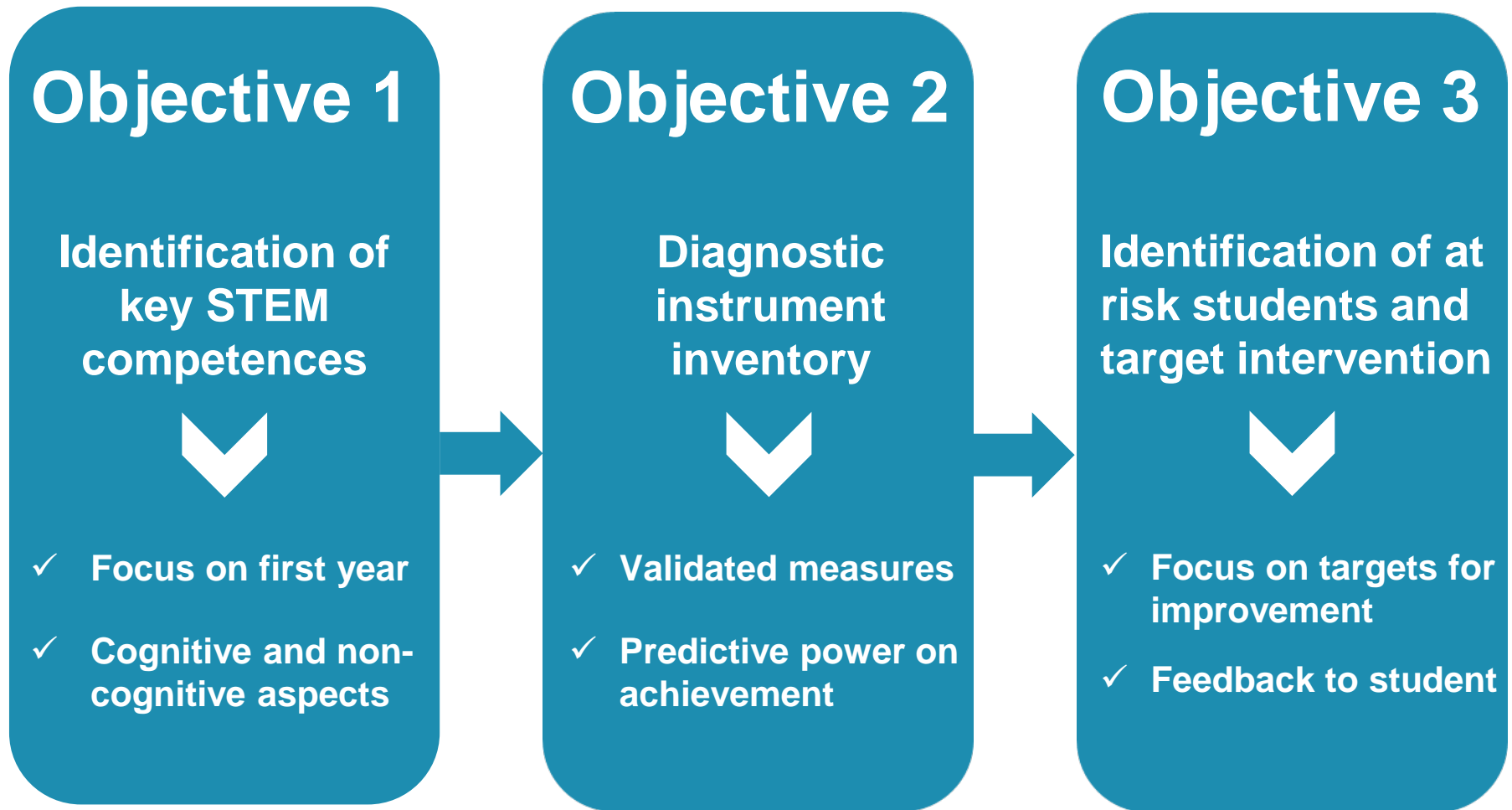
University of Birmingham (UK)
Prof. Kamel Hawwash



Aalto University (Finland)
Prof. Katrina Nordström



Project objectives

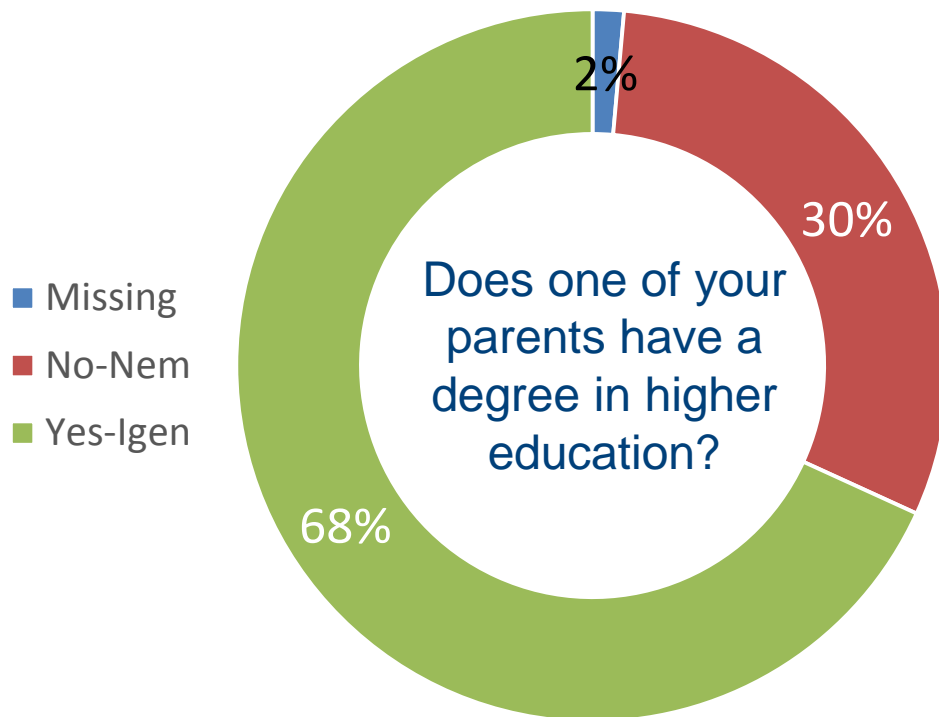


Participants BME

- 990 BME students participated in an extensive questionnaire
- First two weeks academic year 2015-2016

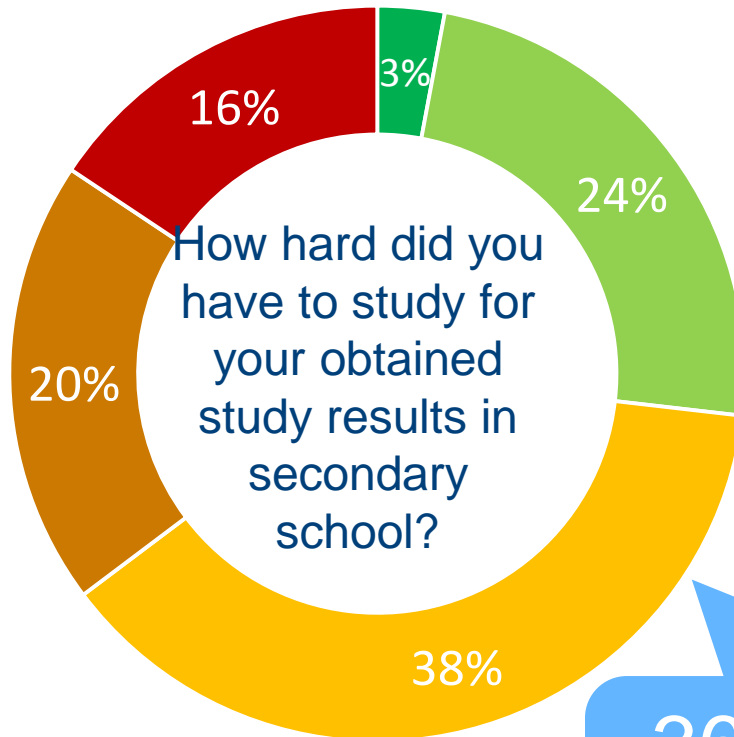
Programme	N	%	Mean entrance score	% female
Chemical Engineering (Vegyésmérnöki szak)	137	14%	458	47%
Civil Engineering (Építőmérnöki szak)	160	16%	381	30%
Electrical Engineering (Villamosmérnöki szak)	322	33%	419	9%
Mechanical Engineering (Gépésmérnöki szak)	291	29%	423	10%
Mathematics (Matematika szak)	39	4%	434	36%
Physics (Fizika szak)	41	4%	440	27%
Total	990	100%	421	20%

Socio-economic background



Programme	No	Yes
Chemical Engineering	25%	75%
Civil Engineering	44%	56%
Electrical Engineering	30%	70%
Mechanical Engineering	30%	70%
Mathematics	15%	85%
Physics	29%	71%

Effort secondary school

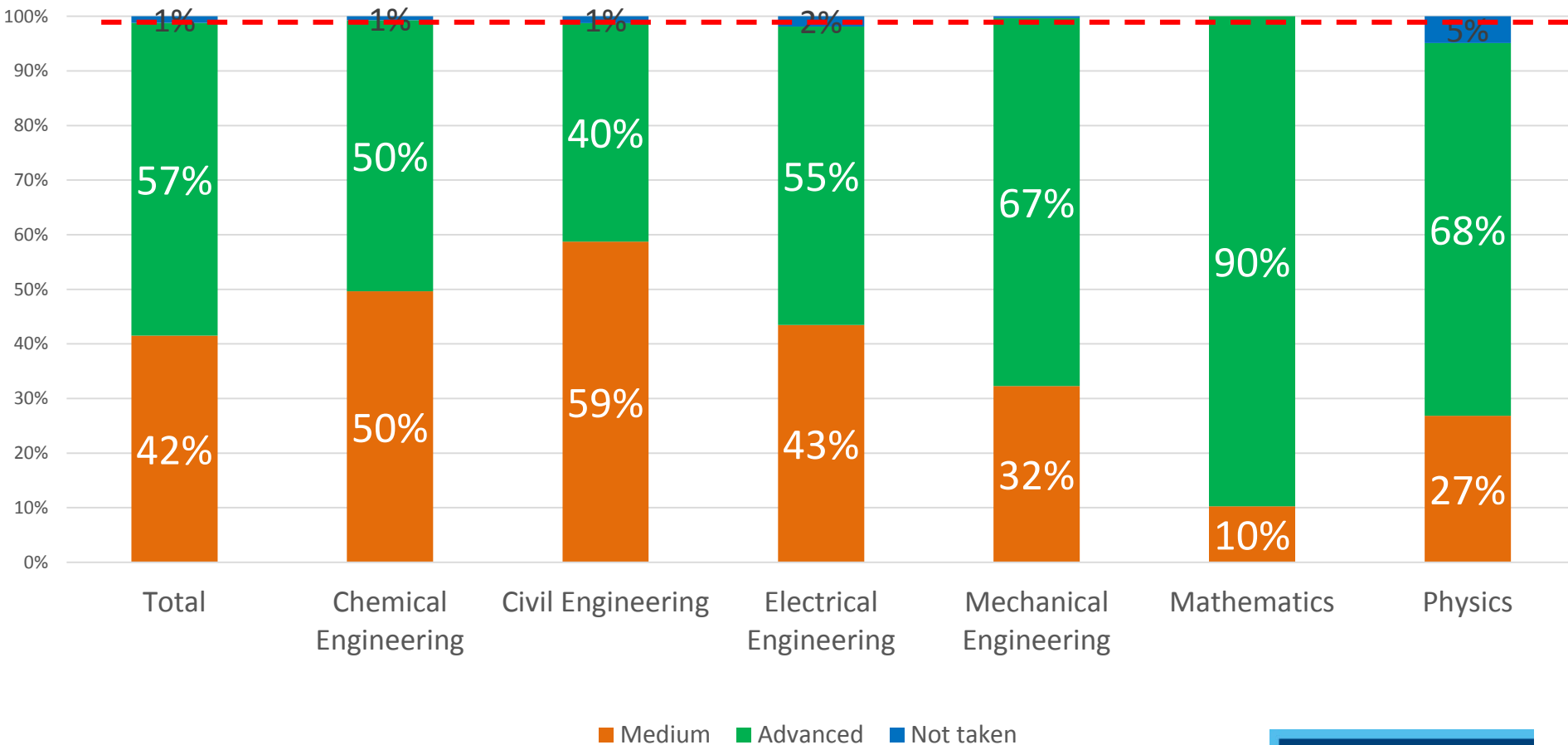


- Very hard (Nagyon keményen)
- Hard (Keményen)
- Average (Átlagosan)
- Not hard (Nem keményen)
- Not hard at all (Egyáltalán nem keményen)

36% of the first-year students indicated that they did not study hard in secondary school

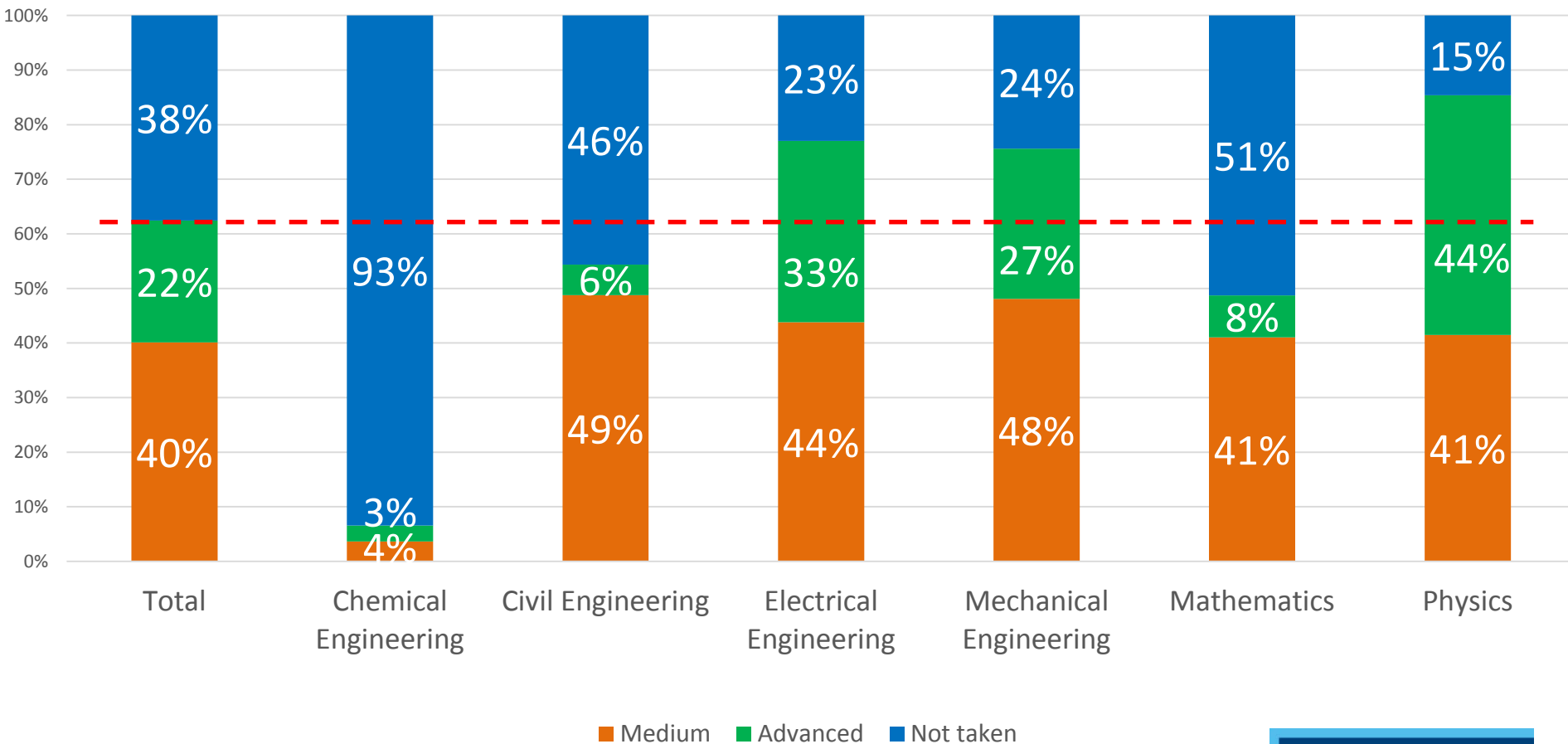
Participation Math matura exam

Mathematics Matura examination



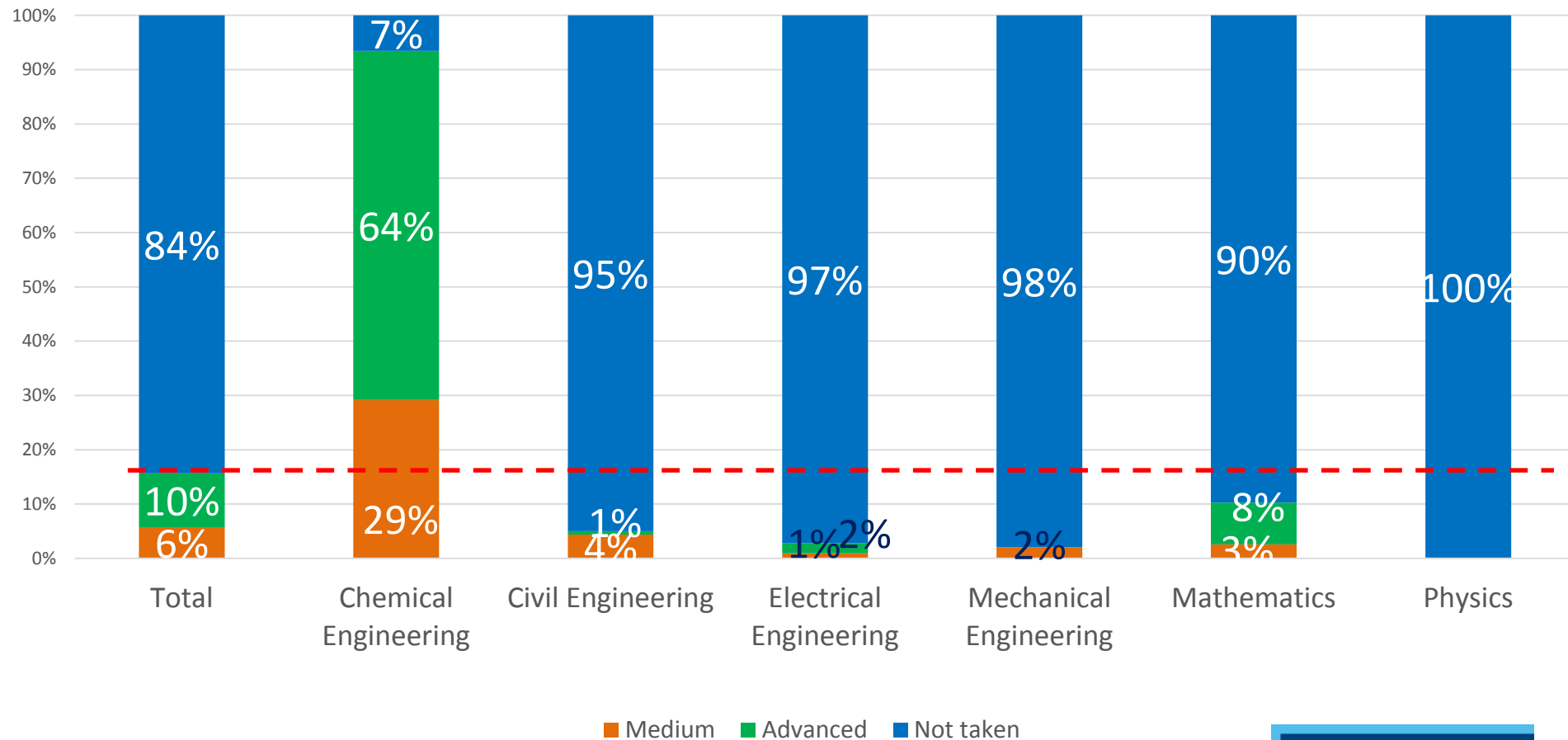
Participation Physics matura exam

Physics matura examination



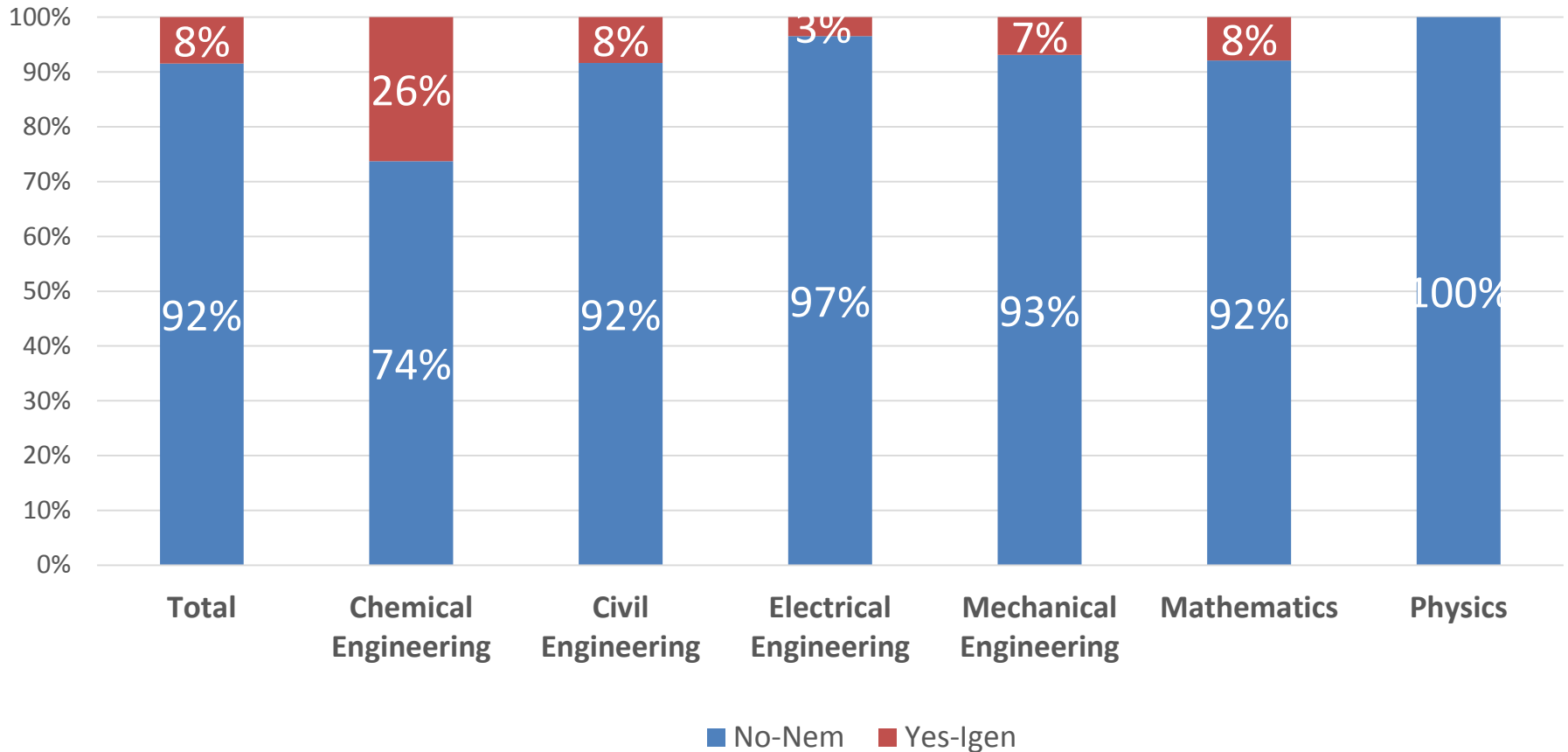
Participation Chemistry matura exam


Chemistry matura examination



Participation summer course

Did you participate in a summer course for math/physics or chemistry?





Relation with student performance after the first semester

Performance indicator

- % credits obtained after the exams January 2016 (SE)
- Average over all study programmes: 78%

	N	Average of CSE
Chemical Engineering (Vegyeszmérnöki szak)	137	94%
Civil Engineering (Építőmérnöki szak)	160	77%
Electrical Engineering (Villamosmérnöki szak)	322	69%
Mechanical Engineering (Gépészmérnöki szak)	291	80%
Mathematics (Matematika szak)	39	80%
Physics (Fizika szak)	41	78%
Total	990	78%

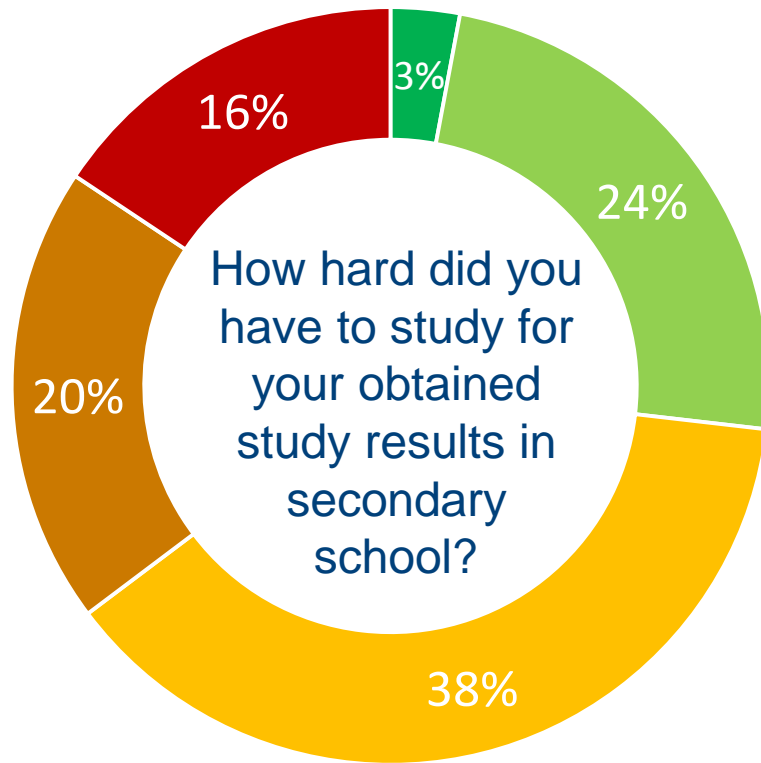
Relation math matura exam & SE

	N	Average math zero score (/60)	Average % credits obtained
Medium level	401	27	72%
▪ Score 4	50	15	54%
▪ Score 5	351	29	75%
Advanced Level	563	40	82%
▪ Score 4	42	26	60%
▪ Score 5	521	41	84%
Grand Total	964	35	78%

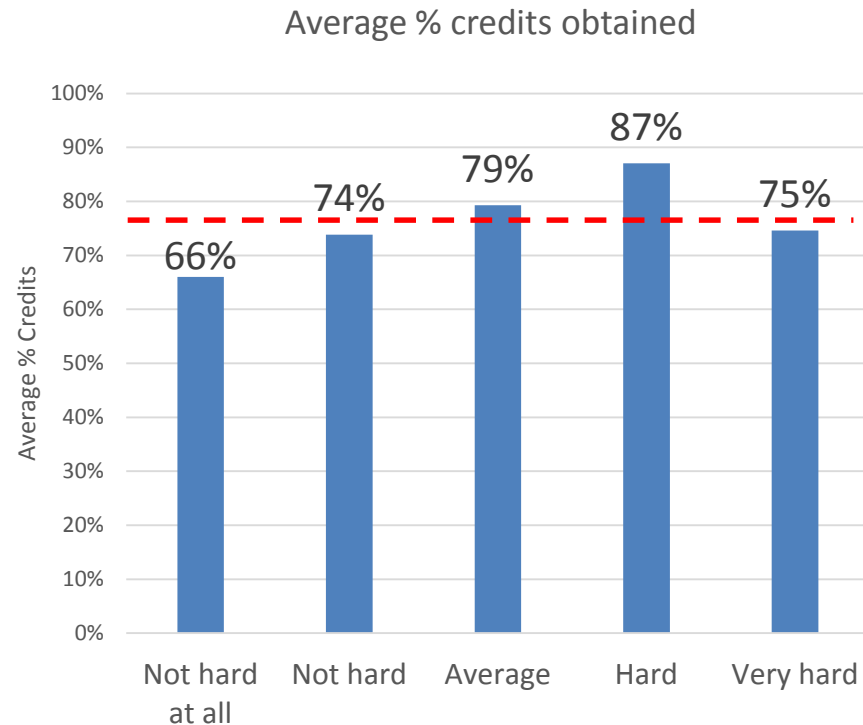
50 students who enter with a **medium** math level & score 4: only achieve 54% of their credits after the first semester

42 students who enter with a **advanced** math level & score 4: only achieve 60% of their credits after the first semester

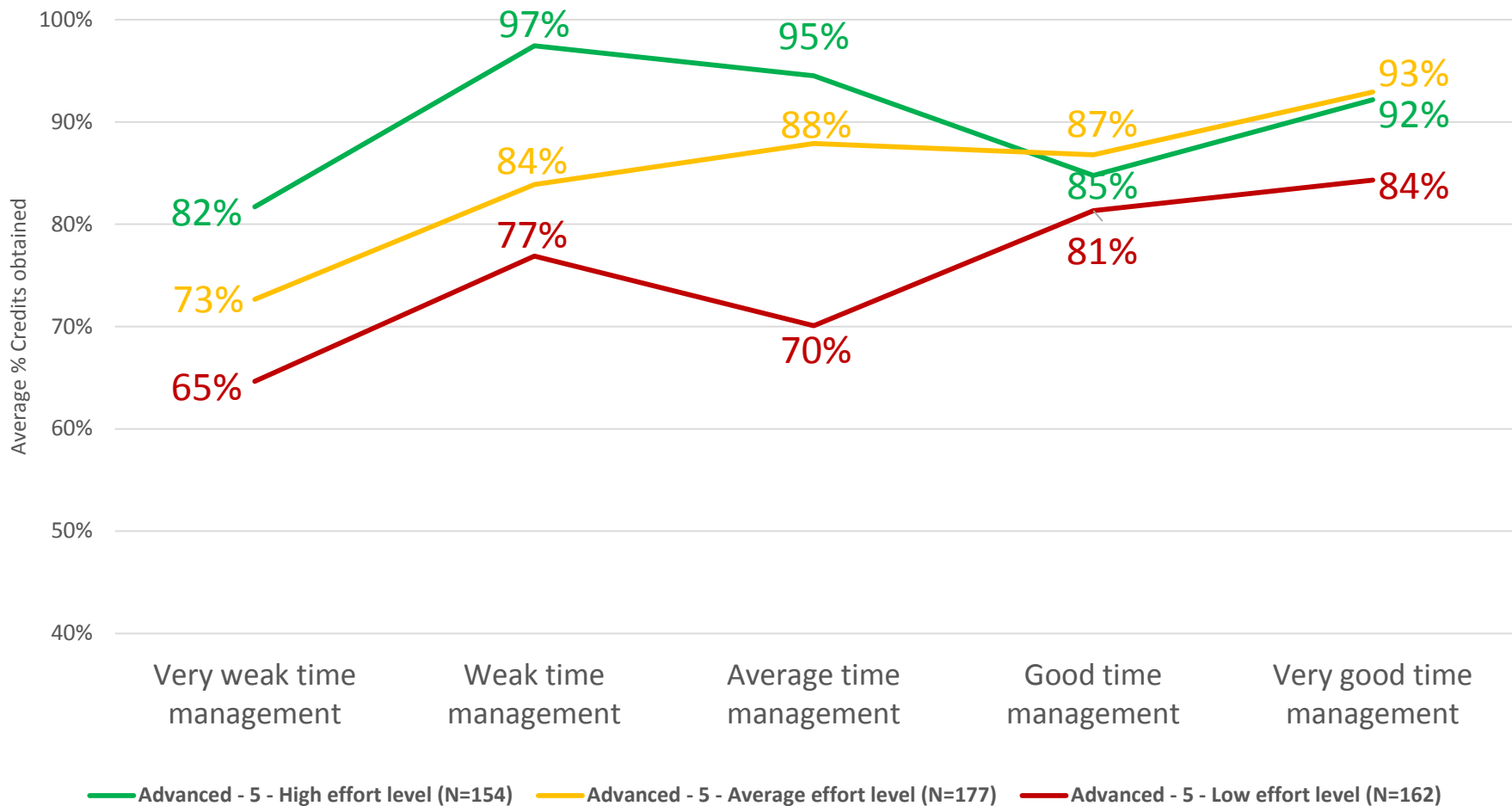
Effort & SE



- Very hard (Nagyon keményen)
- Hard (Keményen)
- Average (Átlagosan)
- Not hard (Nem keményen)
- Not hard at all (Egyáltalán nem keményen)



Effort level & time management



Conclusion

1. Low effort levels in secondary school

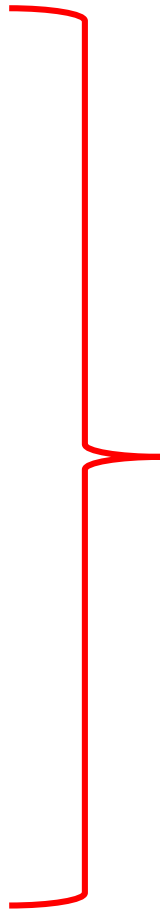


Increased risk at underperformance in the first year

2. Poor time management skills when entering university



Increased risk at underperformance in the first year




Low effort levels in secondary school & poor time management skills



Substantially lower exam scores after the first semester!





What about students
learning and study
strategies?

What about study skills of incoming students?

- Learning and Study Strategies Inventory (LASSI) administered during the first two weeks of the academic year 2015- 2016
- 77 items – ten scales retrieved
- Students were instructed to respond to each item with respect to their study behavior in secondary school
- Link with actual study results (SE Exams January)

Data – LASSI scales

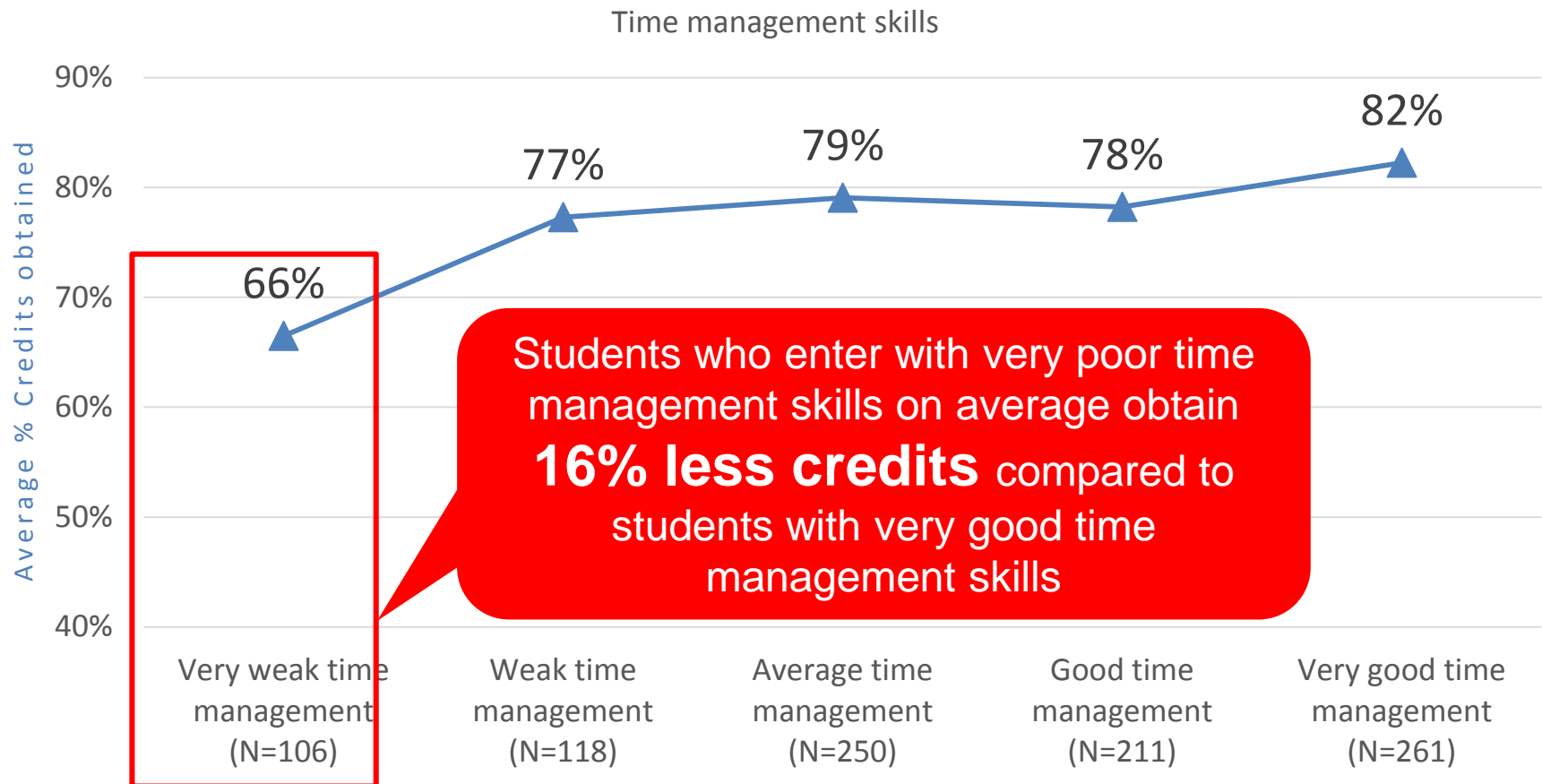
1. Attitude ($r=.16^{**}$)
2. Motivation ($r=.26^{**}$)
3. Time Management ($r=.24^{**}$)
4. Performance Anxiety ($r=.10^{**}$)
5. Concentration ($r=.22^{**}$)
6. Information Processing ($r=.09^{**}$)
7. Selecting main ideas ($r= .11^{**}$)
8. Study aids ($r=.01$)
9. Self-testing ($r=.09^{**}$)
10. Test strategies ($r=.21^{**}$)

$^{**} p < .01$

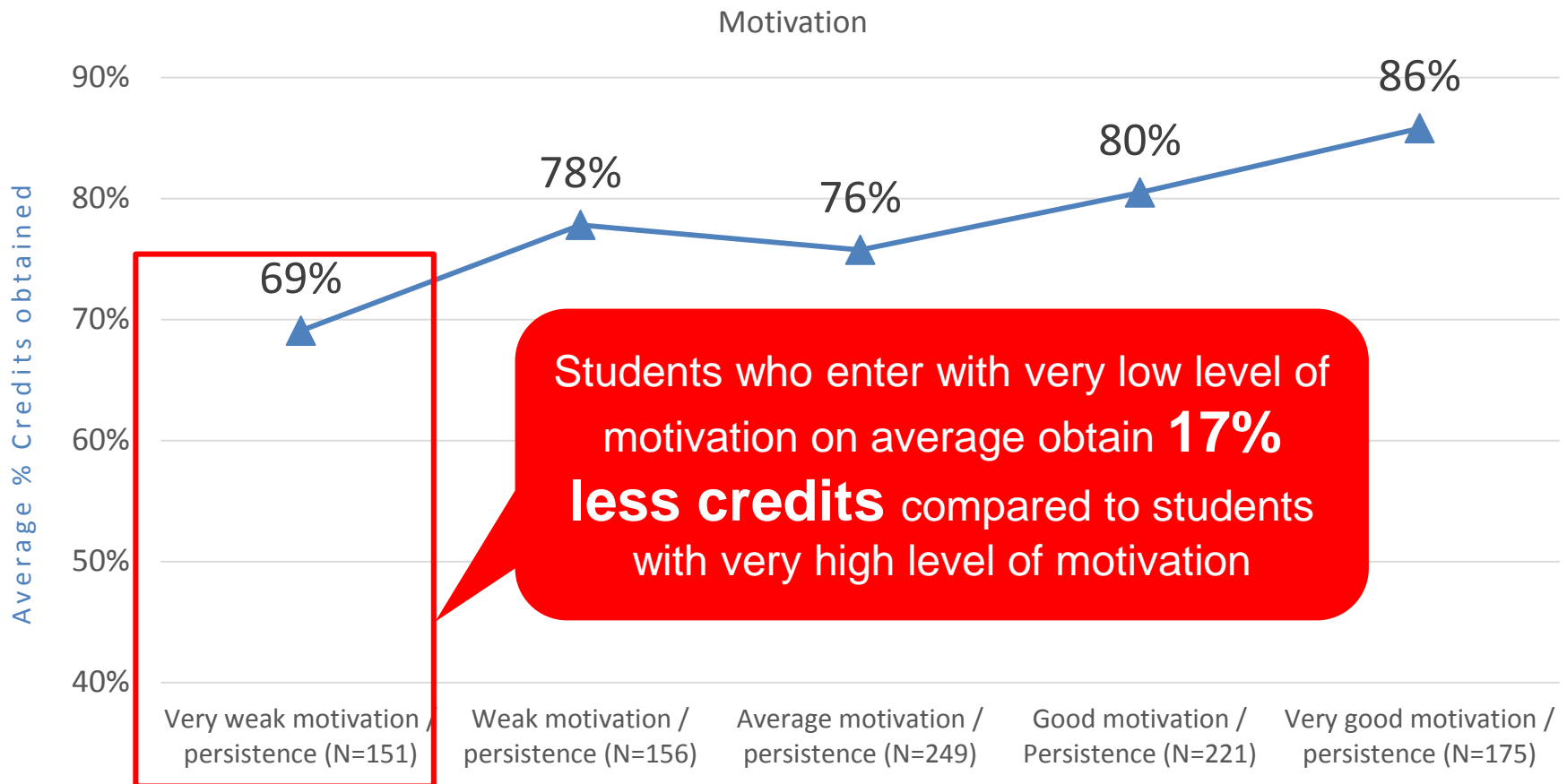
Results study skills

- 3 scales of the LASSI hold some predictive value for future study success:
 - Motivation/persistence
 - Time Management
 - Concentration
- Primarily self-regulatory skills
- Limited role of learning process variables (e.g., study techniques)

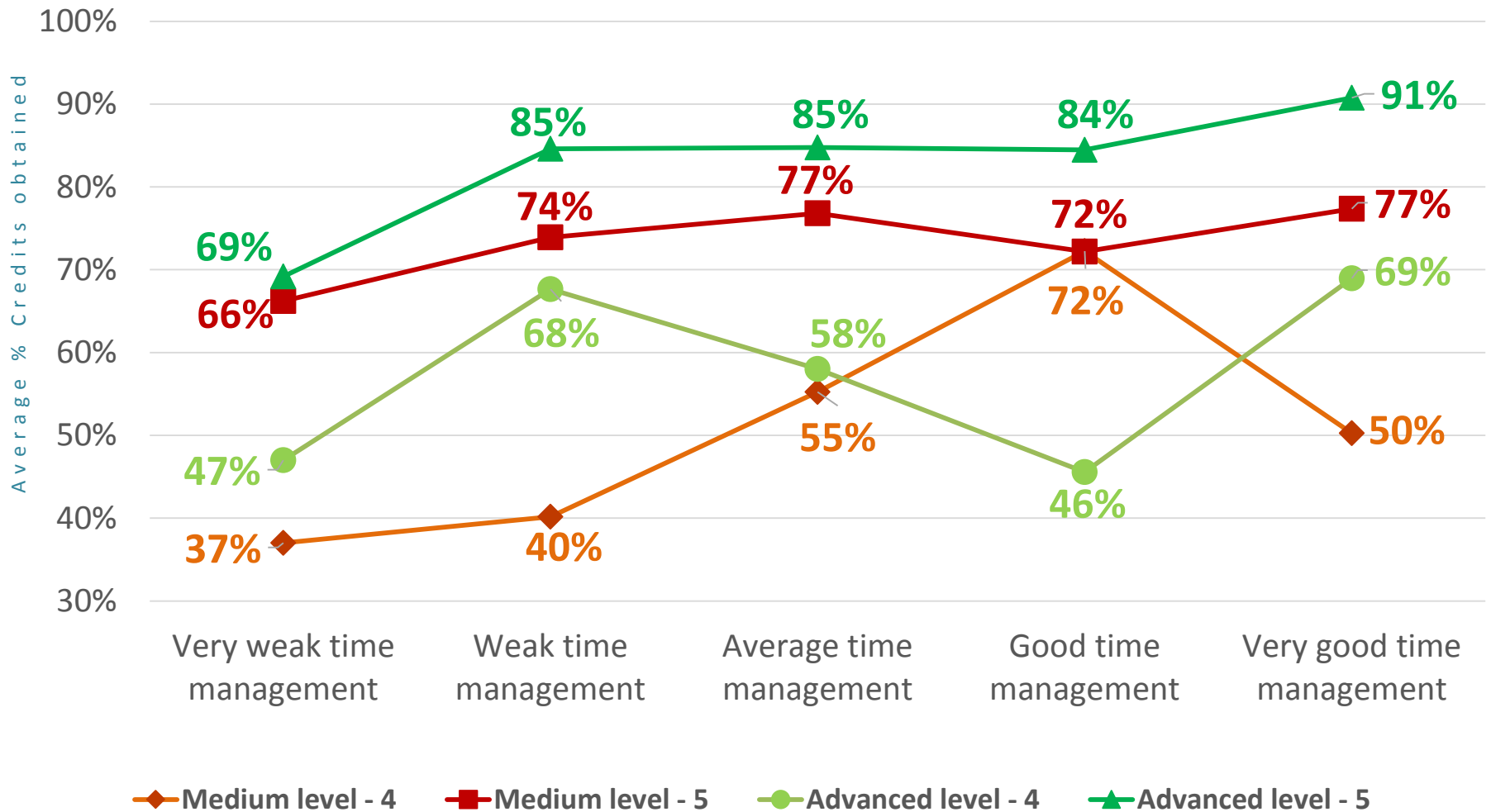
Time management & SE



Motivation/persistence & SE



Math matura & time management





More information?



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