EPFL

Tools for Transition:

an integrated approach to help new students adapt, survive and succeed

Swissuniversities/Netzwerk Lehre

May 2022

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Problem Outline

- Generally no aptitude tests on admission

- University courses are extremely challenging

- Workload is very high

- Students need to rapidly adapt their learning methods

- Often they also need to set up a household for the first time

Problem Outline + EPFL Specifics (?)

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- **Backgrounds of students are very different**

- **Students have often found school maths/physics easy, expect to continue**

- **Common core of courses in 1st year, especially in maths and physics (année propédeutique)**

- **Often large groups of students in exercise sessions of core courses**

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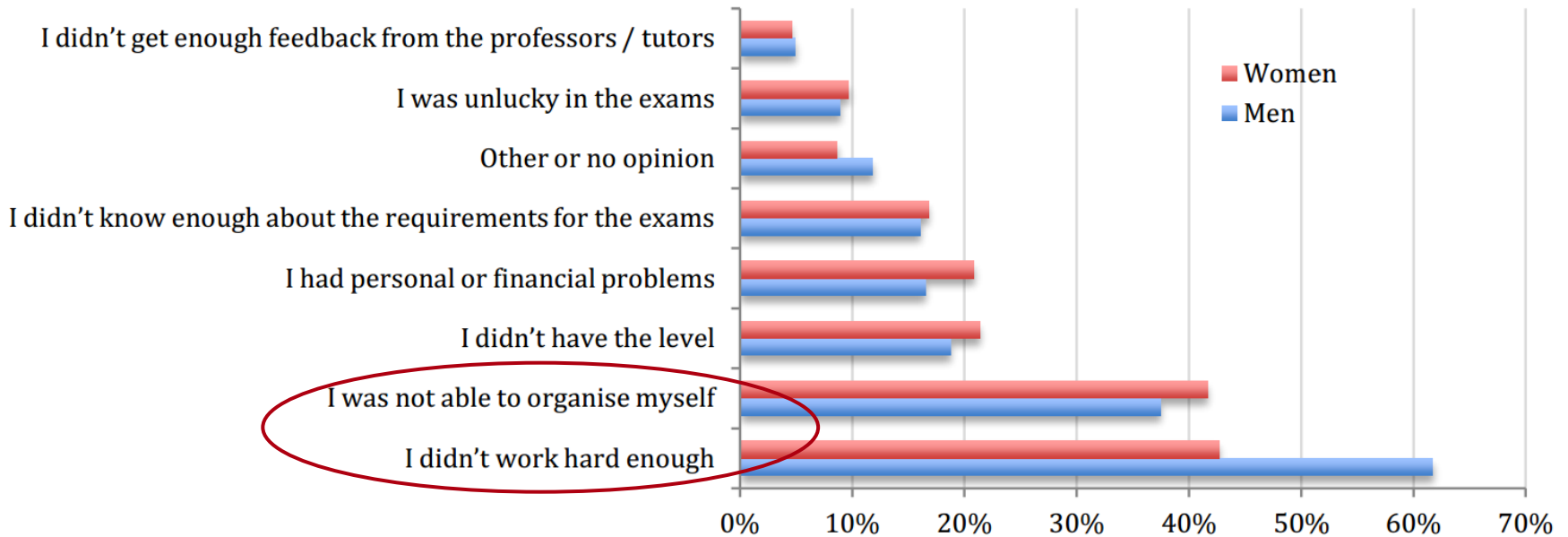
High stress, high failure rate in 1st year

Success factors in 1st year..?
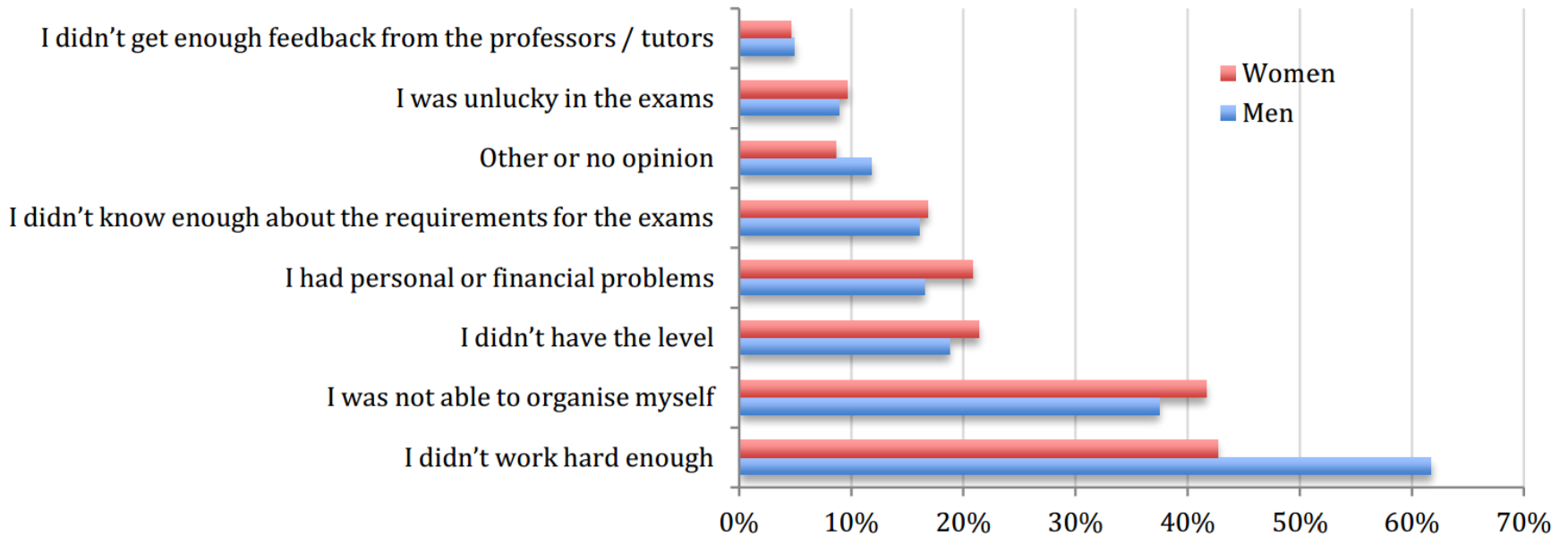
Question 8: "You repeated the first year. What do you think the reason for this is?" (max 2 responses)
The sum is above 100% since students could provide 2 responses

Réponses des 645 élèves qui ont redoublé la première année
quant à la raison de leur échec initial (2011)

Success factors in 1st year..?

Chart legend: Women (red), Men (blue)

Categories (top to bottom):
- I didn't get enough feedback from the professors / tutors
- I was unlucky in the exams
- Other or no opinion
- I didn't know enough about the requirements for the exams
- I had personal or financial problems
- I didn't have the level
- I was not able to organise myself
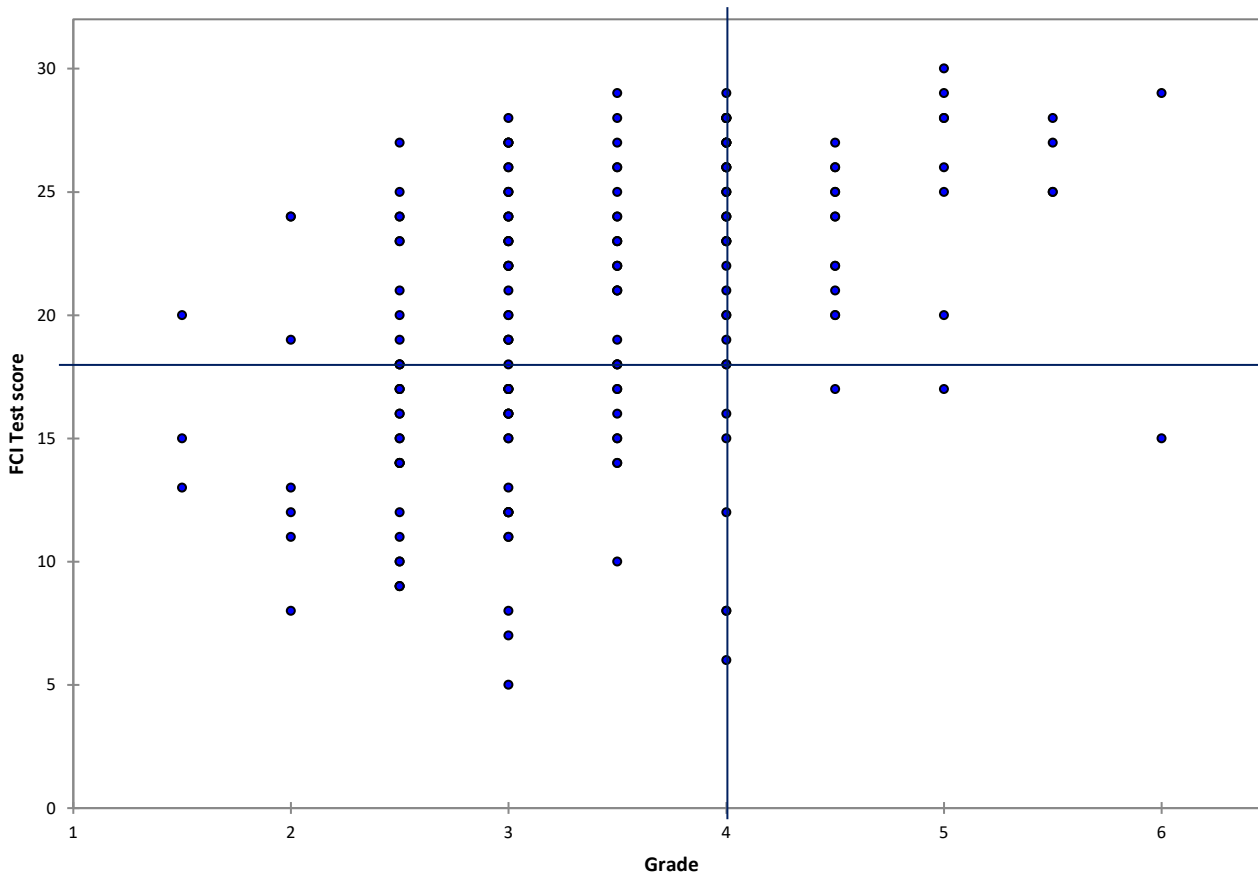- I didn't work hard enough

X-axis: 0% 10% 20% 30% 40% 50% 60% 70%

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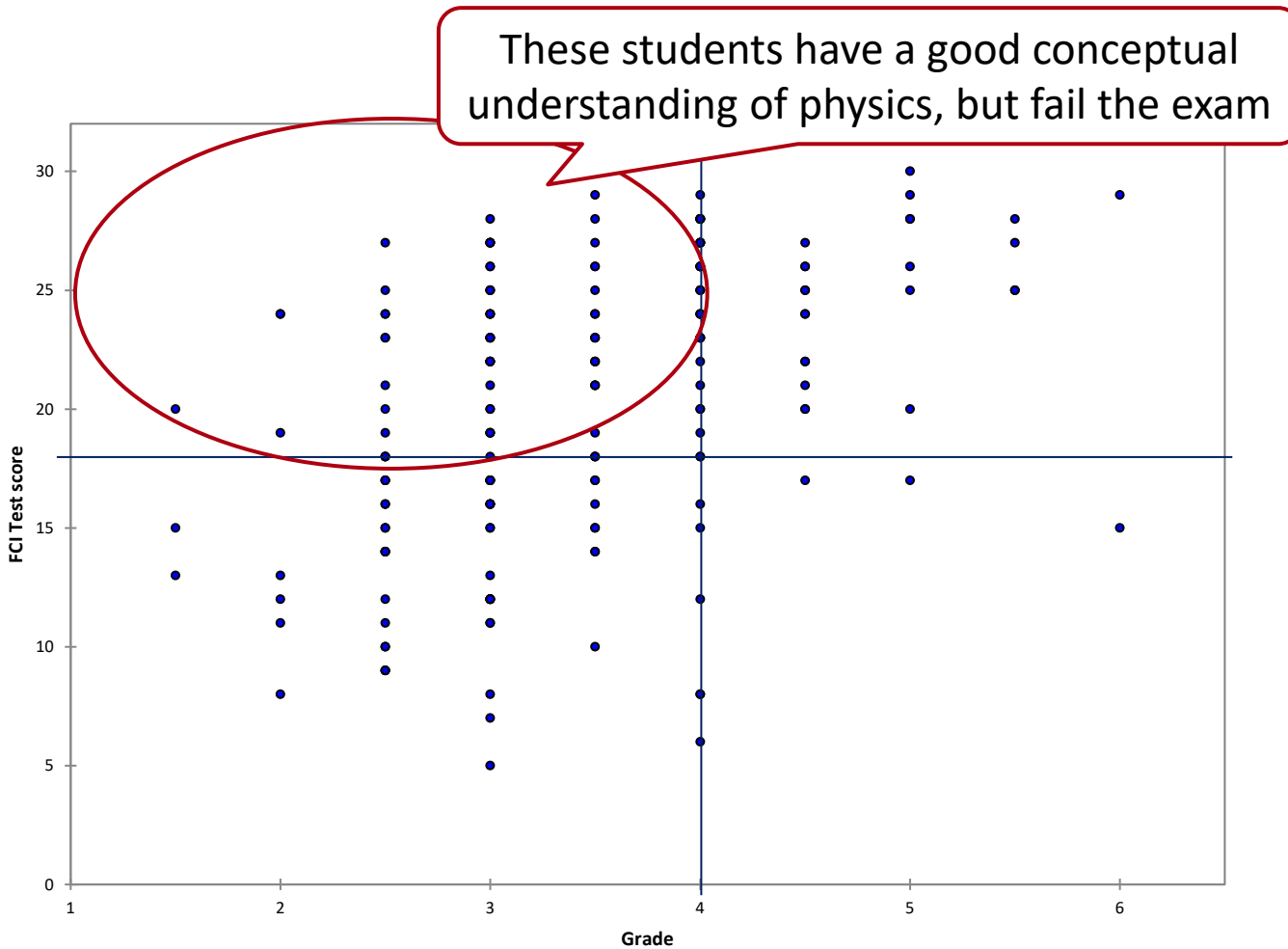quant à la raison de leur échec initial (2011)

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What else?

Compréhension conceptuelle de la physique par rapport à la note en physique I
(236 étudiants de première année, printemps 2014)

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What have we done about it?

Book , MOOC and workshop "Learning to Learn"

Training of TAs in 1st year courses

Development of Learning Companion – bidirectional feedback tool to enhance transversal skills development

Additions during pandemic 2020-22

- Saturday exercise sessions

- Mentoring system for academic support

- Students 4 Students

- Positive consequence -> more discussion of needs of students and tweaking of system – more time for exams, flipped classrooms, availability of recordings

Creation of **Centre Propédeutique (CePro)**, MOOC «Warmup EPFL» - Simone Deparis, Sylvain Bréchet, Jose-Luis Zuleta, Ilya Eigenbrot etc.

What is CePro for?

▸ Platform for sharing of best practice between teachers of the core courses

▸ Coordinating training of TAs to ensure consistent pedagogical approach and reinforce message (compulsory since this academic year)

▸ Creation of Moodle "course" to provide an integrated platform for incoming students to find resources

▸ Offering support to incoming students as early as possible

▸ Promoting best practice and excellence in teaching

▸ Encouraging measures that promote equality in STEM

▸ Collecting and disseminating data to measure the effectiveness of approaches

Effect of extension to exam duration

Mean and Confidence Interval (95%).
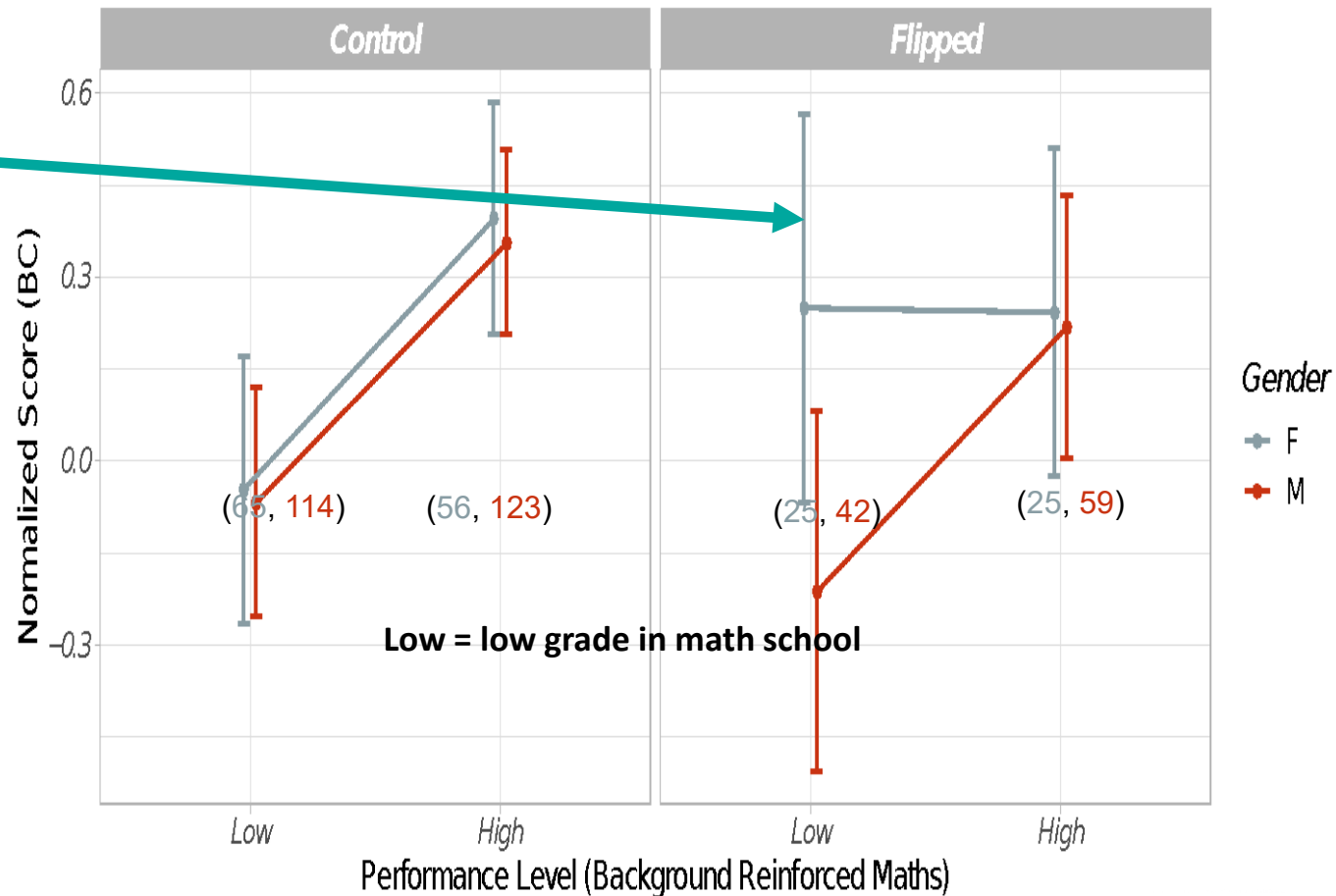*Effects of Exam Change: Year 2 vs. Year 3*
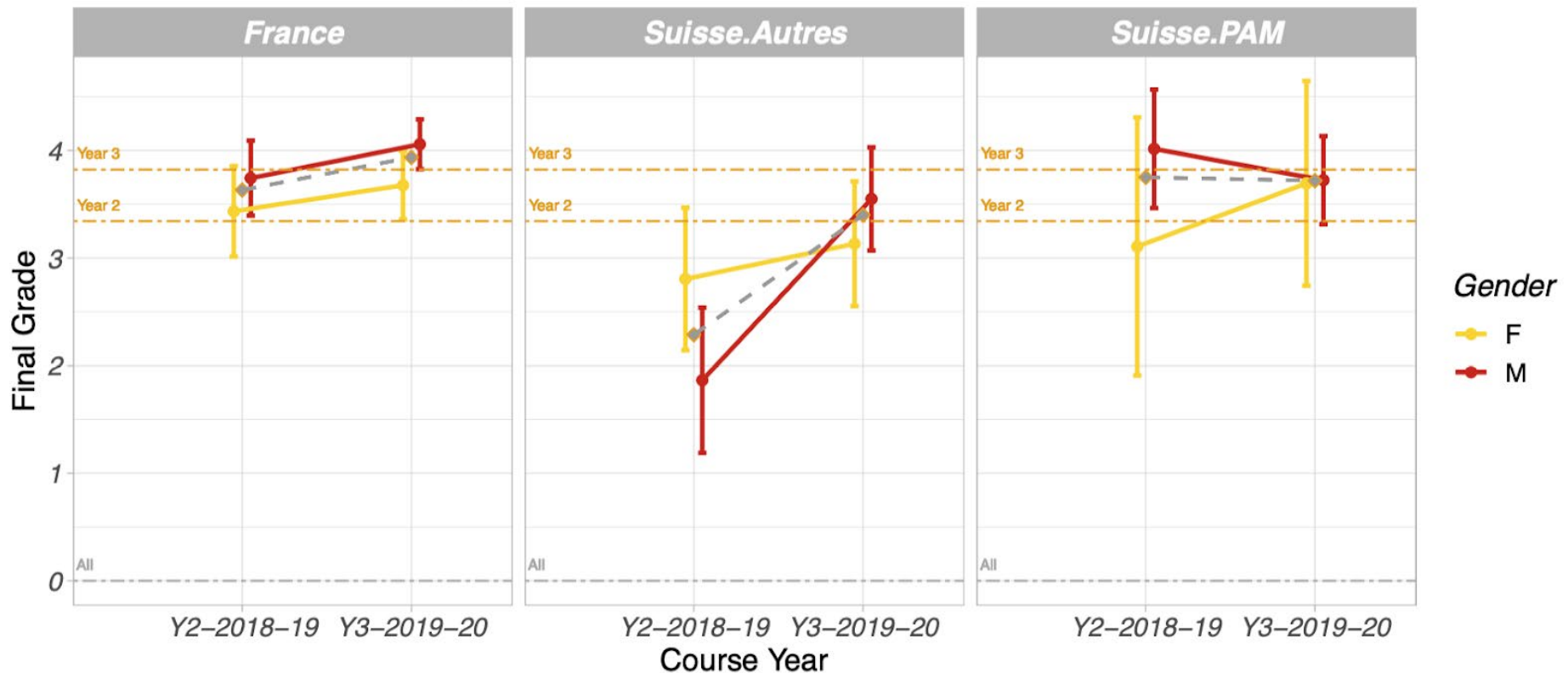
p-values: 0.06516   0.0004917   0.4947
(genders together)

Effect of flipped classroom teaching (Y1 + Y2) (Extended maths curricula)

Female students with low grade in math

Kruskal-Wallis Test
$\chi^2(df=1) = 3.39$, p=.06 *, $\varepsilon^2=0.051$

Mean and Confidence Interval (95%).
French and Swiss Students

Low = low grade in math school

Kit de Demarrage

Additional resources (non-pedagogical support)

We work closely with the academic sections, university administration, the students' union and student support services so that all stakeholders are aware of the various resources available to students who need them (e.g. stress management, social support, hardship fund, psychosocial help).

We also encourage student assistants to intervene appropriately to support students who are being discriminated against – not our core role, but has a direct impact on students' academic performance.

What do we aim to achieve?
What can we measure?

We would like to provide an integrated, consistent approach to supporting 1st year students through the school to university transition in the context of EPFL.

We would like to offer this support as early as possible to the incoming students, and raise awareness of it

▸ Perhaps we can measure effectiveness by detecting whether the students' metacognitive approach to their own learning adapts, and whether they apply more (and more appropriate) transversal skills to their own learning

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