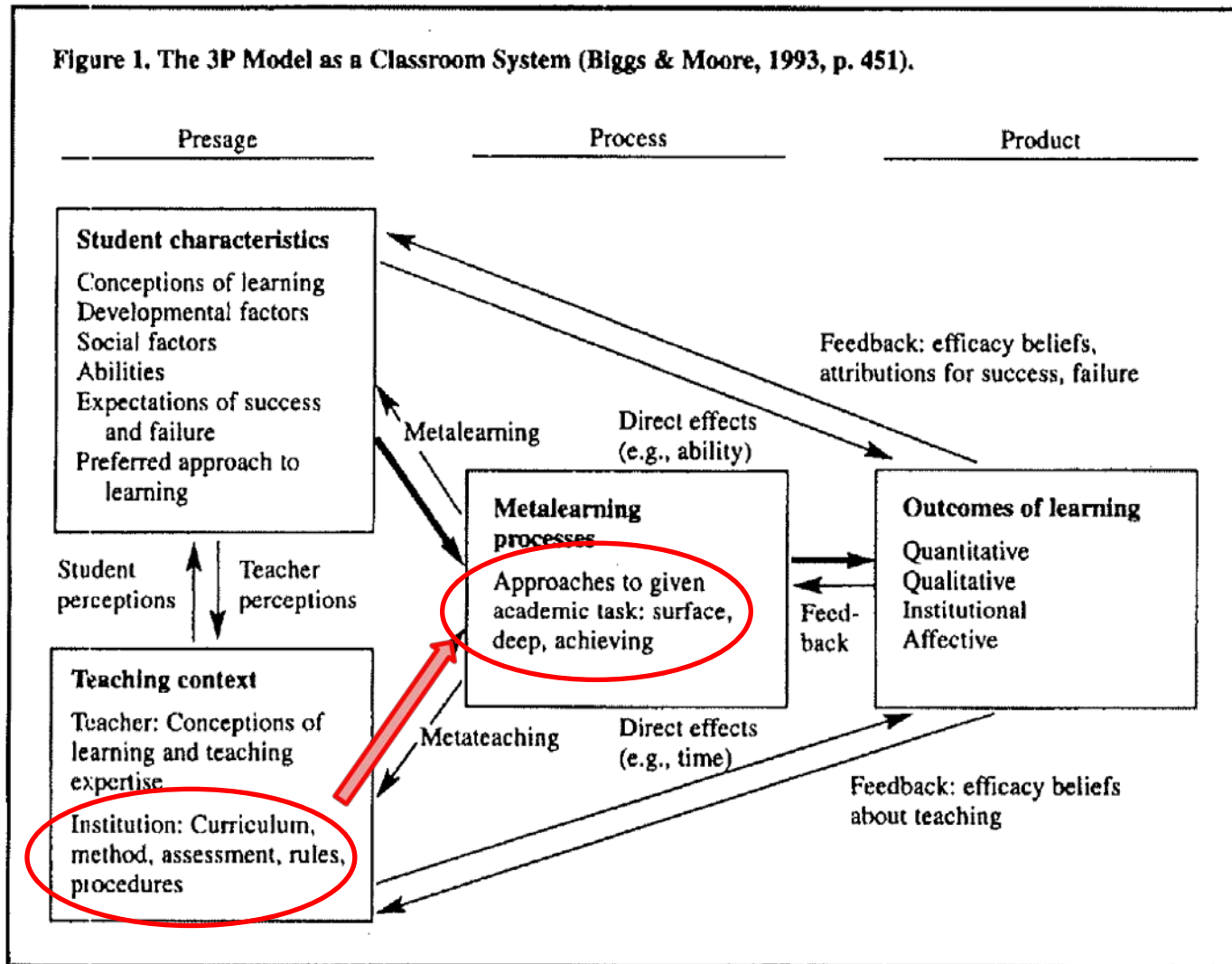


Comparison of medical students' learning approaches in a traditional versus integrated lecture-based curricula.

A. Baroffio, M. Abbiati,
M.W. Gerbase, M.P. Gustin

Conceptual framework: Model 3P « Teaching and Learning »



Background

- Complex relationships between educational context and learning approaches
- Selection of medical students in an educational context potentially favoring surface approaches to learning (teaching based on lectures, learning assessed by factual knowledge)
- Paradox between conditions of selection and deep approach required to develop clinical reasoning

Research question

Can educational context's features of a lecture-based curriculum influence students' approaches to learning?

Aims

1. compare undergraduate first-year medical students' learning approaches in 2 different educational contexts
2. investigate whether and how the educational context impacts students' learning approaches

Setting

Two French-speaking learning environments (Lyon and Geneva medical schools) offering similar teaching (lectures) and assessment (MCQ) formats, but displaying different curriculum organization (traditional vs thematic integrated modules).

Educational context

	LYON	GENEVA
CURRICULUM ORGANIZATION	By modules Not integrated	By modules Integrated
LEARNING FORMAT	55 % lectures 5% directed work 40% self-learning	55 % lectures 5% practicals and seminars 40% self-learning
SELF-LEARNING	Cramming	Complementary readings Cramming
ASSESSMENT FORMAT	MCQ	MCQ
SELECTION	21%	31%

Educational context

	LYON	GENEVA
CURRICULUM ORGANIZATION	By modules Not integrated	By modules Integrated
LEARNING FORMAT	55 % lectures 5% directed work 40% self-learning	55 % lectures 5% practicals and seminars 40% self-learning
SELF-LEARNING	Cramming	Complementary readings Cramming
ASSESSMENT FORMAT	MCQ	MCQ
SELECTION	21%	31%

Populations

	2011-2012		2012-2013	
	LYON	GENEVA	LYON	GENEVA
n	1654#	293*	441*	331*
age	19 ± 1	20 ± 2	19 ± 1	20 ± 1
gender (% female)	64	65	67	65
Repeater (% 2 nd inscription)	36	28	35	23
GPA (marks high school diploma)				
≥ 14/20 (%)	40	NA	55	93
≥ 16/20 (%)	12		22	32

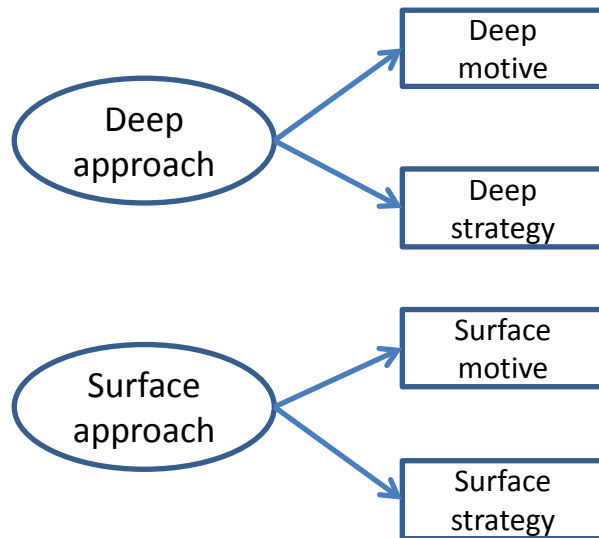
compulsory

* optional

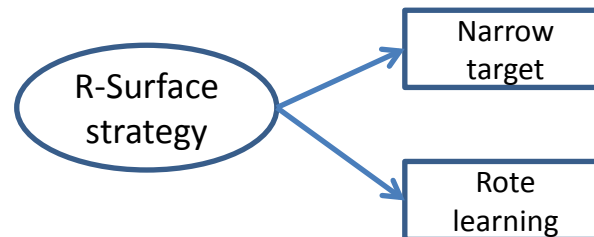
Tools

Learning approaches

- R-SPQ: Revised 2-factor Study Process Questionnaire
- 20 items, french translation



	<i>Surface</i>	<i>Deep</i>
<i>Motive</i>	fear of failure	intrinsic interest
<i>Strategy</i>	narrow target, rote learn	maximise meaning

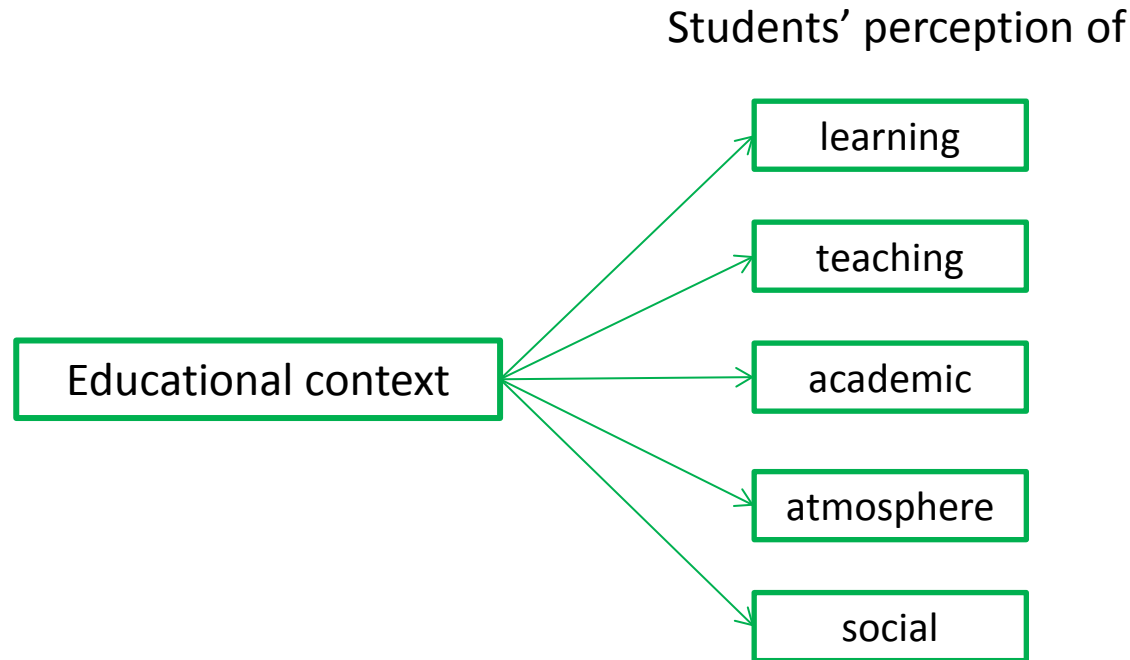


Biggs, J. B., Kember, D., Leung, D.Y.P. (2001). "The Revised Two Factor Study Process Questionnaire: R-SPQ-2F." British Journal of Educational Psychology **71**: 133-149.

Tools

Educational context

- DREEM: The Dundee Ready Education Environment Measure
- 50 items, french-validated version

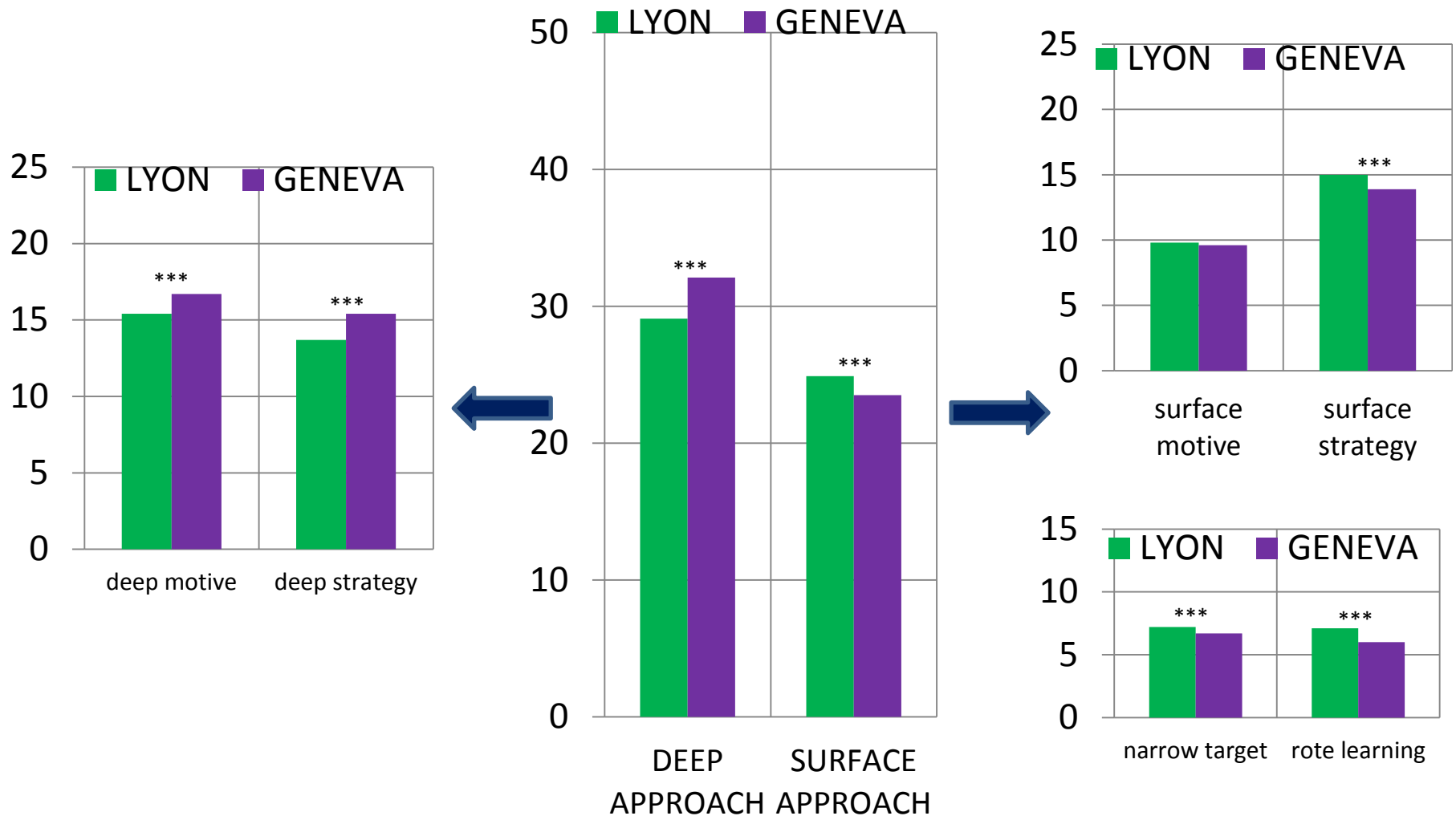


Data analysis

- T tests to compare Lyon and Geneva students
- Structural equation modelling to test whether and how the educational context impacts learning approaches

**STUDY PART I (2011-12):
COMPARISON OF LEARNING APPROACHES
OF LYON AND GENEVA STUDENTS**

Learning approaches (11-12)



*** T Test p value < 10^{-3}

Geneva: n = 293

Lyon: n = 1654

Hypothesis

Educational
context

- Integrated curriculum
- Self-learning complementary to lectures

Students'
perception

- Better students' perception of their educational context

Learning
approach

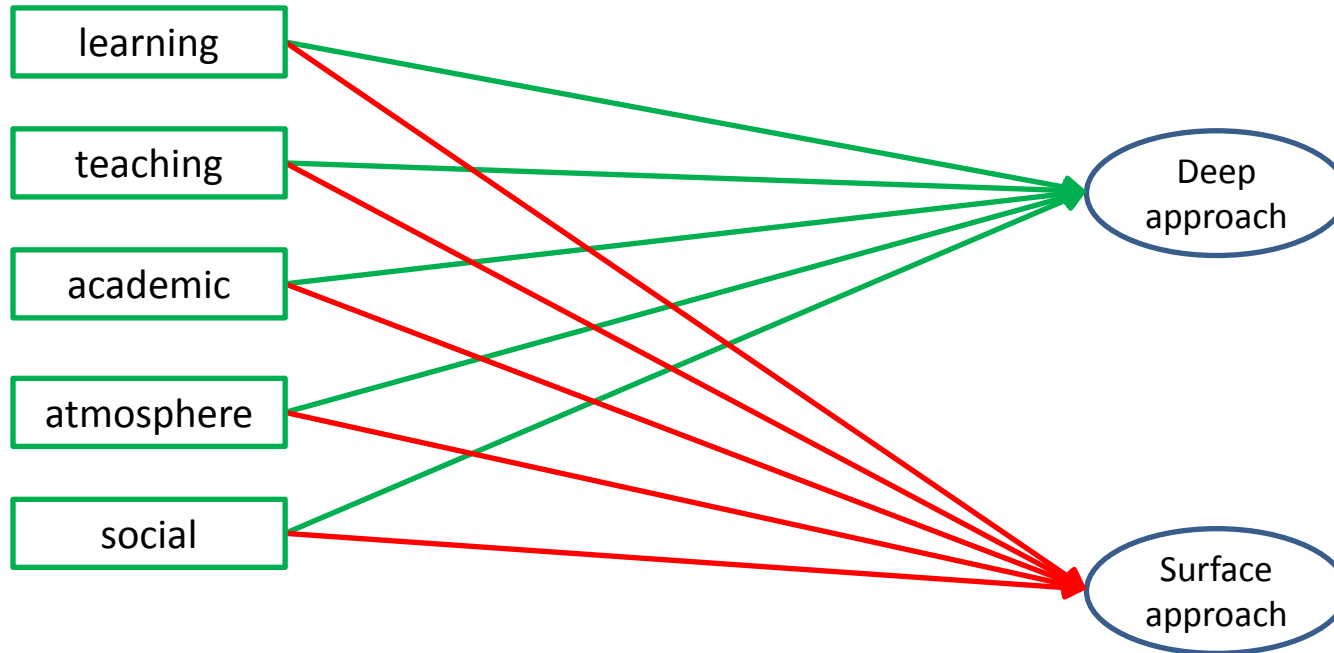
- Deeper approach to learning
- Less surface approach to learning

**STUDY PART II (2012-13):
RELATIONSHIP BETWEEN LEARNING APPROACHES
AND PERCEPTION OF EDUCATIONAL CONTEXT**

Tested model 1

Students' perception of

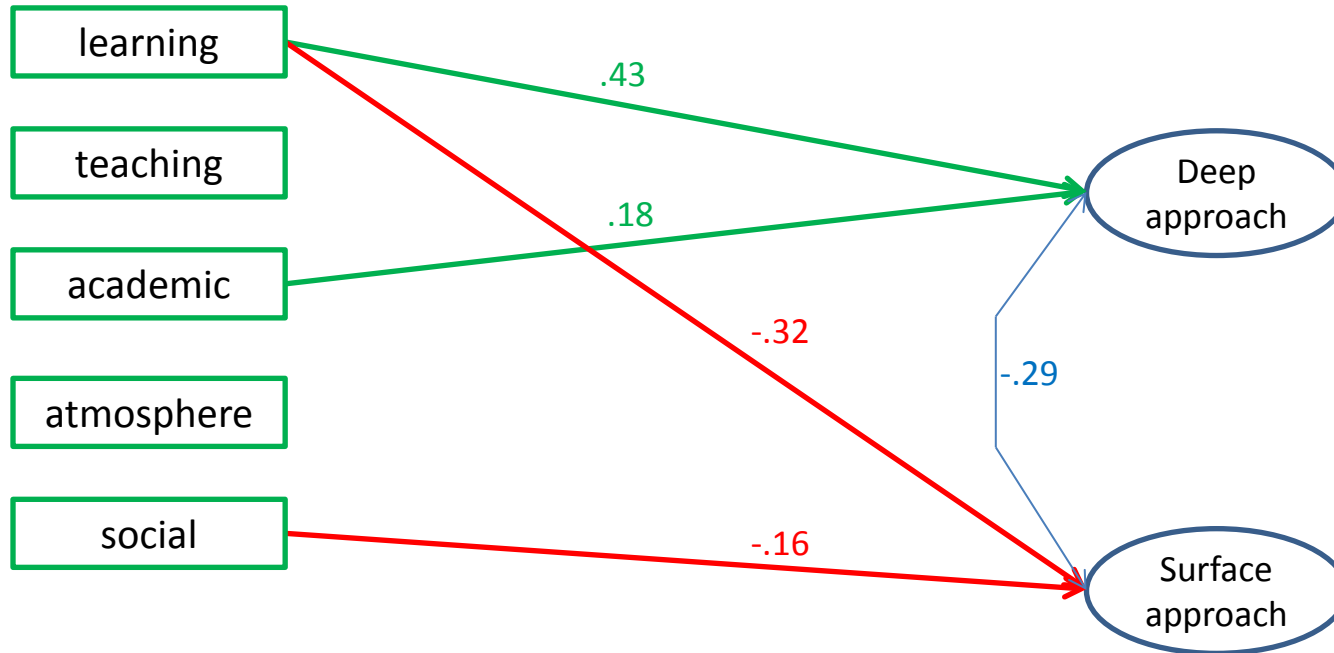
Students' learning approaches



Results model 1

Students' perception of

Students' learning approaches

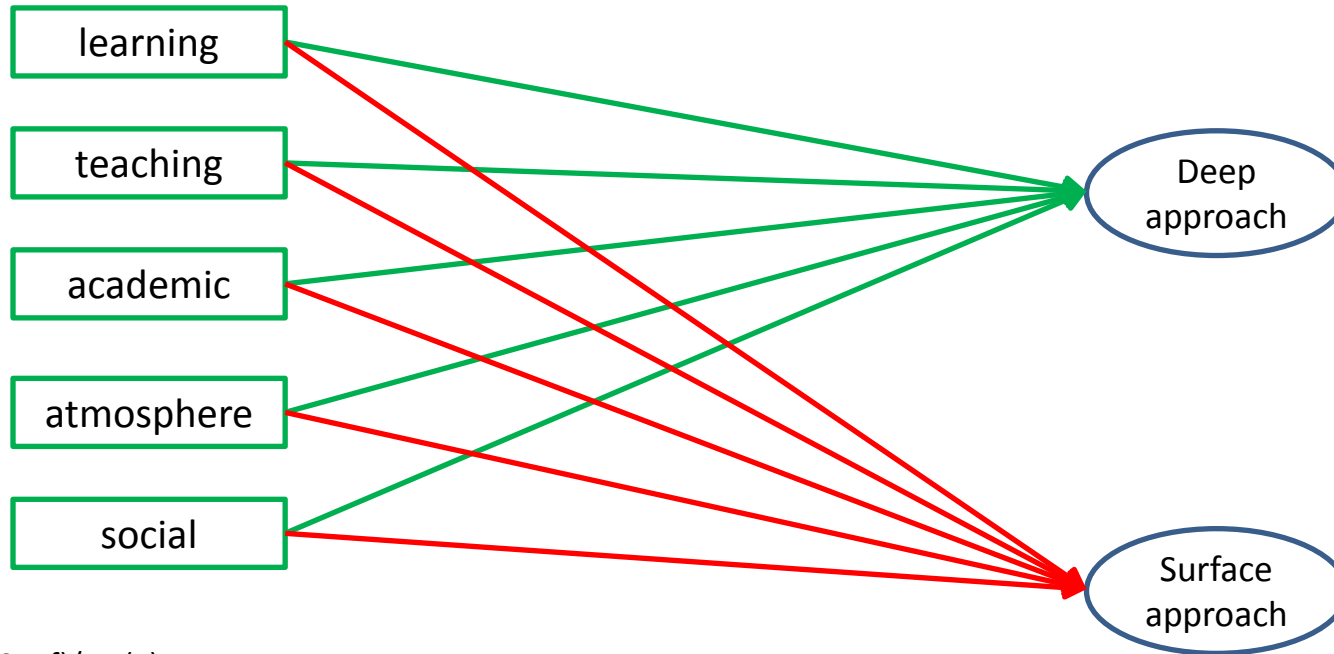


$$\chi^2(19) = 29.751, p = 0.06;$$
$$RSMEA = 0.032; CFI = 0.985$$

Tested model 2 (with covariables)

Students' perception of

Students' learning approaches



gender : F (0:ref)/ M (1)

site: Lyon (0:ref)/ Geneva(1)

GPA: 0: 10-12; 1: 12-14; 2: 14-16; 3: 16-20

repeater: 1st inscription(0)/2nd (1)

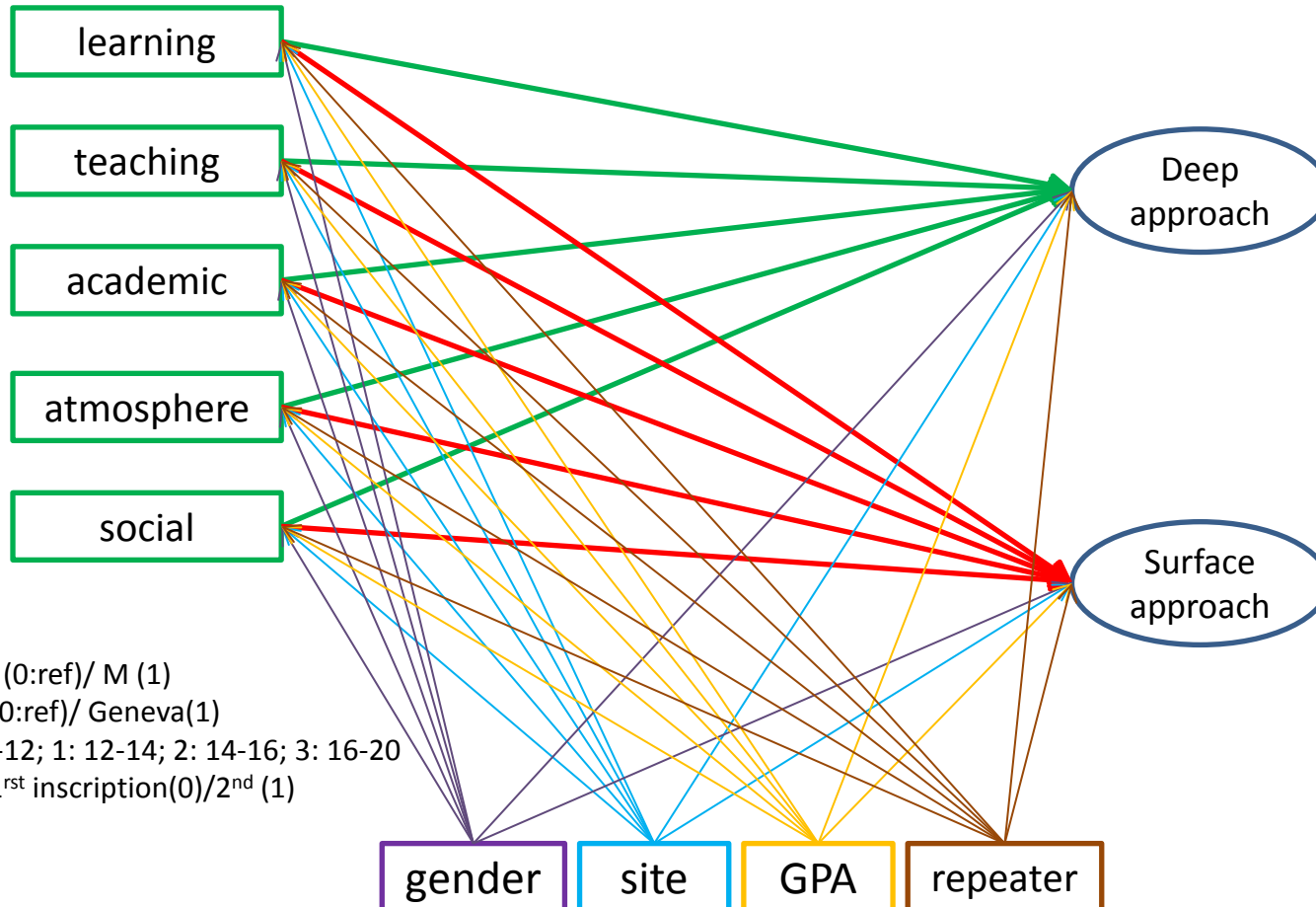


First-year medical students
Lyon (n 291) and Geneva (n 246)

Tested model 2 (with covariables)

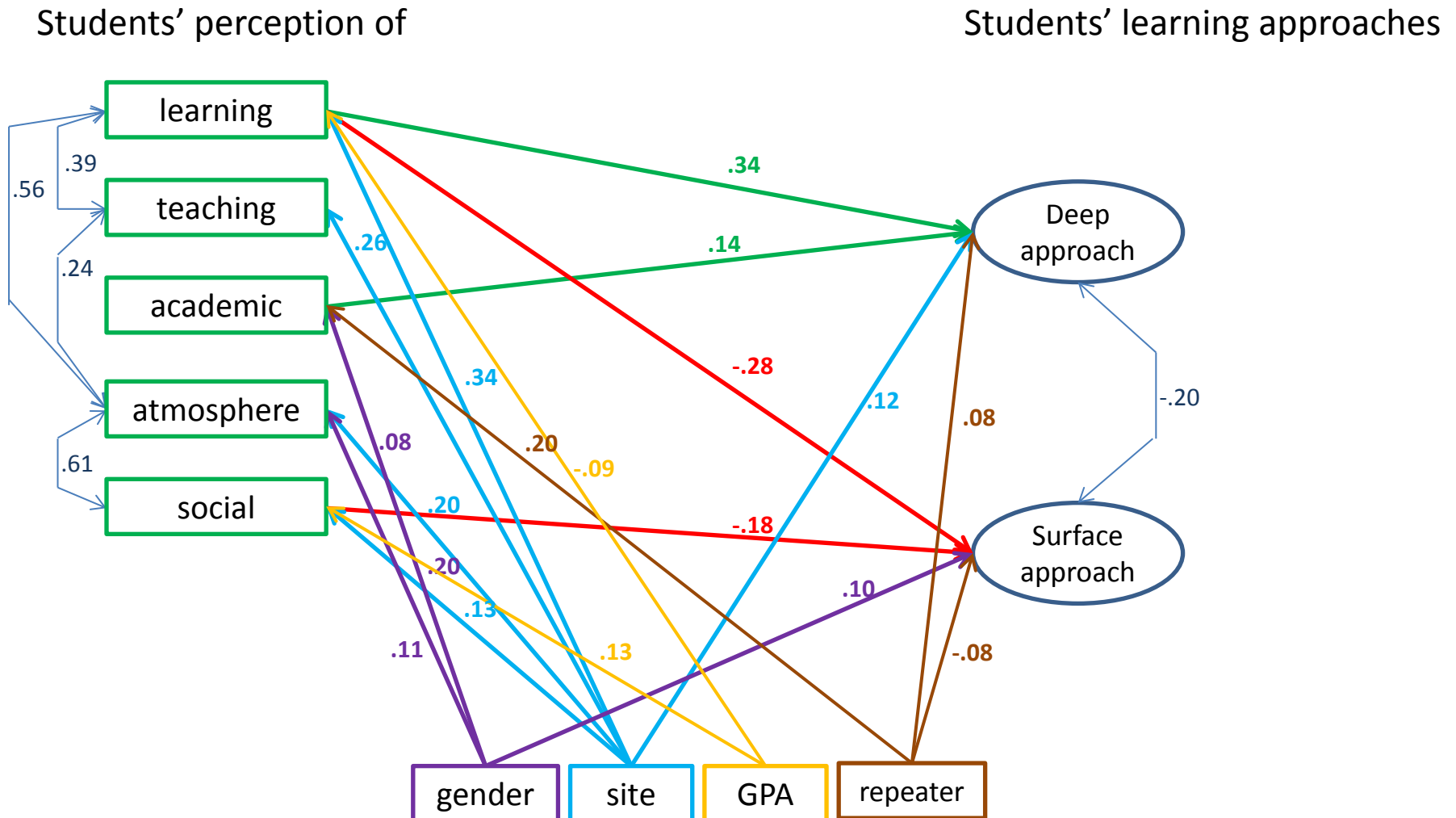
Students' perception of

Students' learning approaches



First-year medical students
Lyon (n 291) and Geneva (n 246)

Results model 2



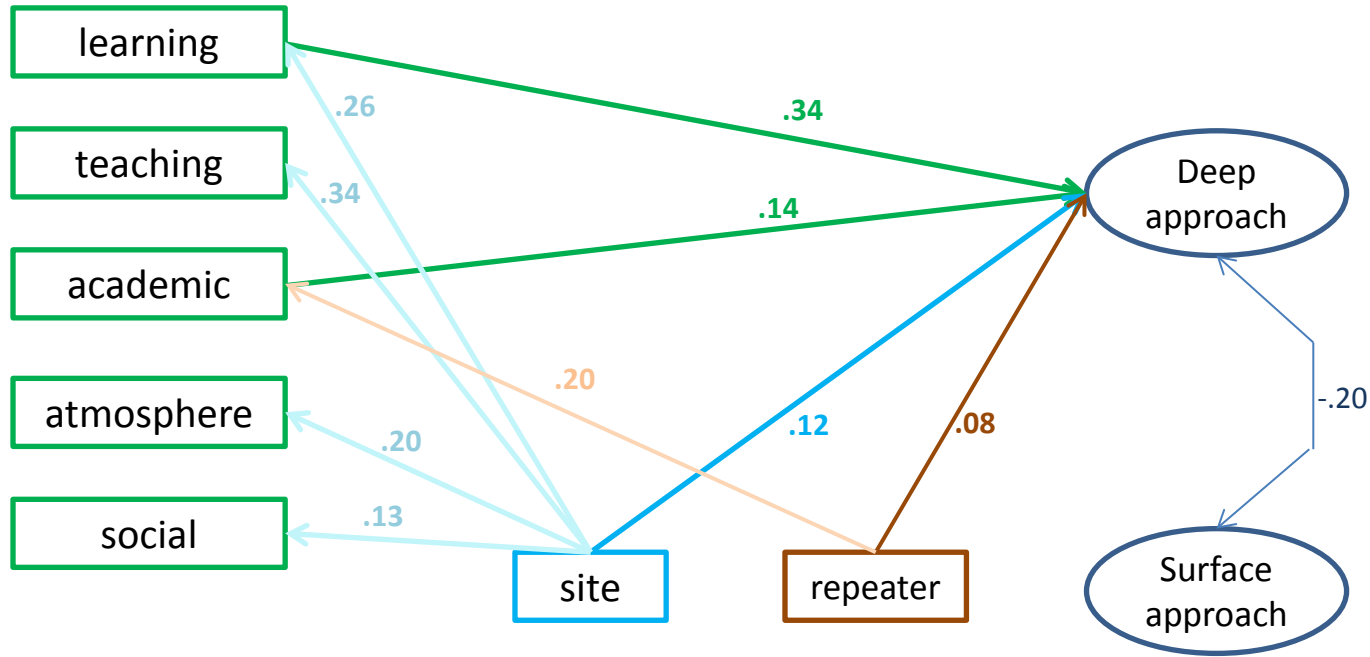
$$\chi^2(26) = 39,673, p 0.042;$$

$$RSMEA = 0.032; CFI = 0.992$$

Influence of educational context on deep approach

Students' perception of

Students' learning approaches

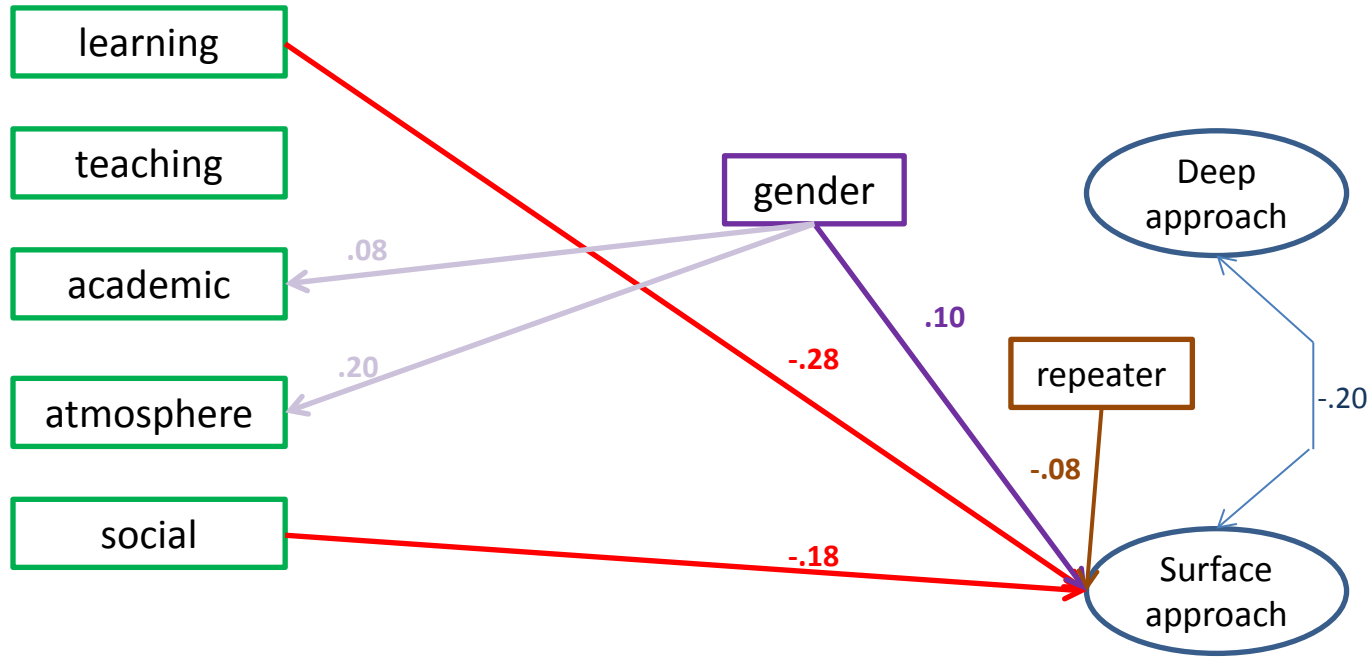


$R^2 = 0.27$; $p < 0.001$

Influence of educational context on surface approach

Students' perception of

Students' learning approaches

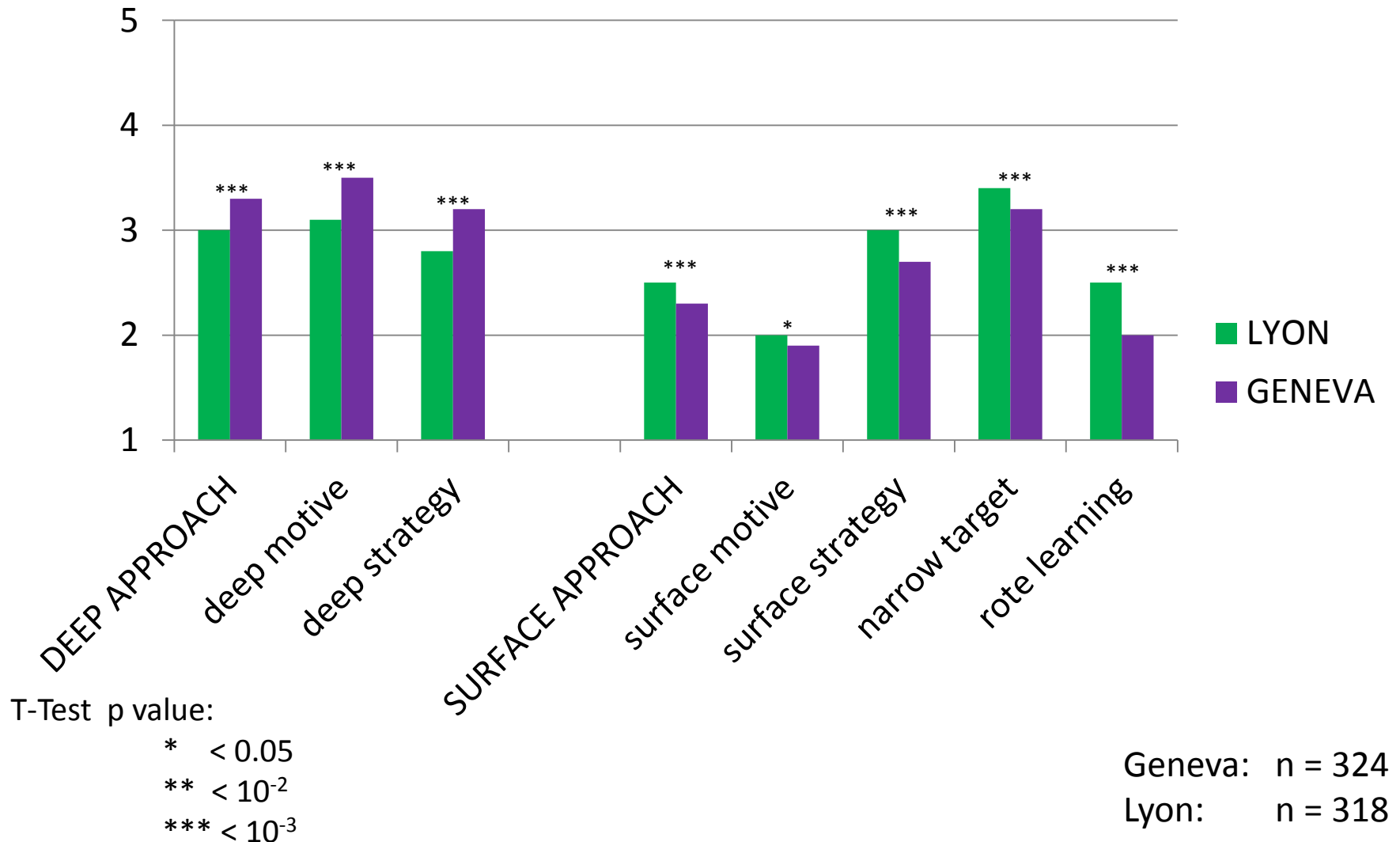


$Rsq = 0.16; p < 0.001$

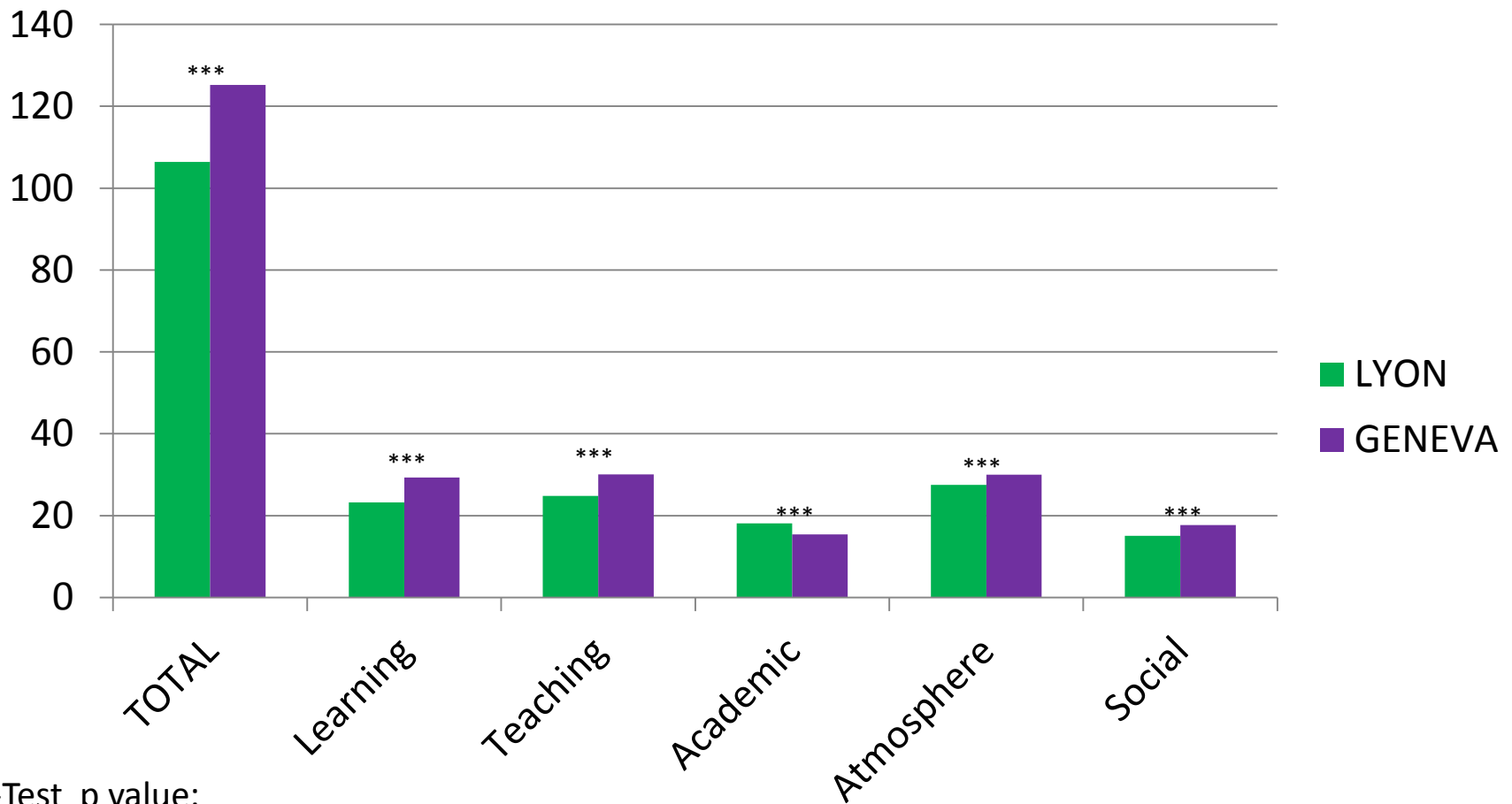
Conclusion and discussion

1. First-year medical students use deeper and less surface approaches in Geneva than in Lyon
2. This might be partly linked to a better perception of the educational context, particularly the teaching context
3. Our interpretation: An integrated selection-year curriculum might partly compensate the potentially detrimental influence of lecture-based teaching and factual assessment on students' approaches to learning.

Learning approaches (12-13)



Perception of the educational context (12-13)



T-Test p value:

* < 0.05

** < 10^{-2}

*** < 10^{-3}

Geneva: n = 324

Lyon: n = 318