

Improving students' use of a deep approach to learning: Should we focus efforts on integrating our curricula?

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FACULTÉ DE MÉDECINE



UNIVERSITÉ
DE GENÈVE



Université Claude Bernard Lyon 1



Faculté de biologie et de médecine
Ecole de médecine



UNIL | Université de Lausanne

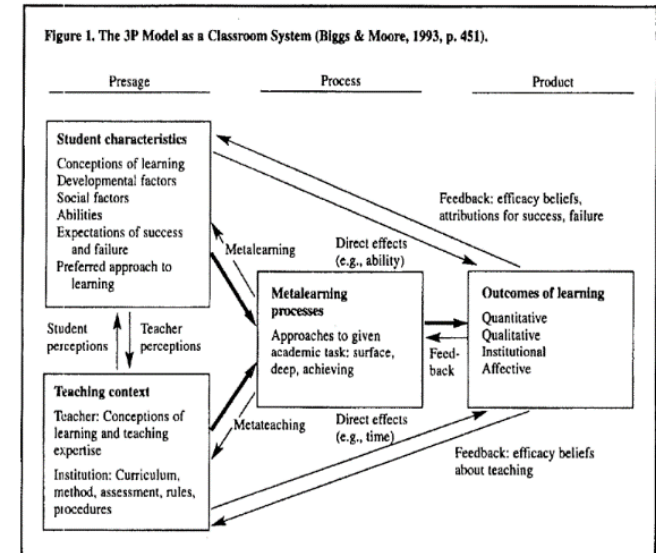
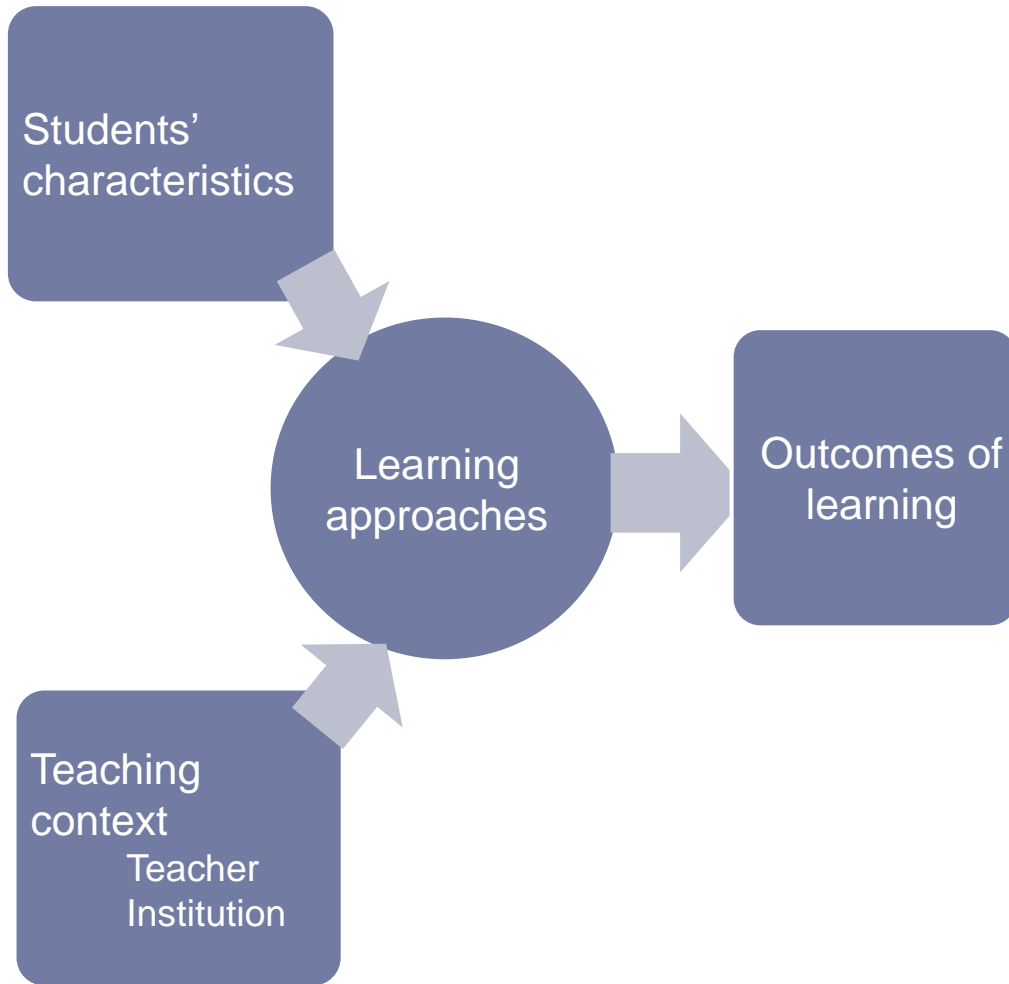
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Conceptual framework

Conceptual framework: Model 3P « Teaching and Learning »

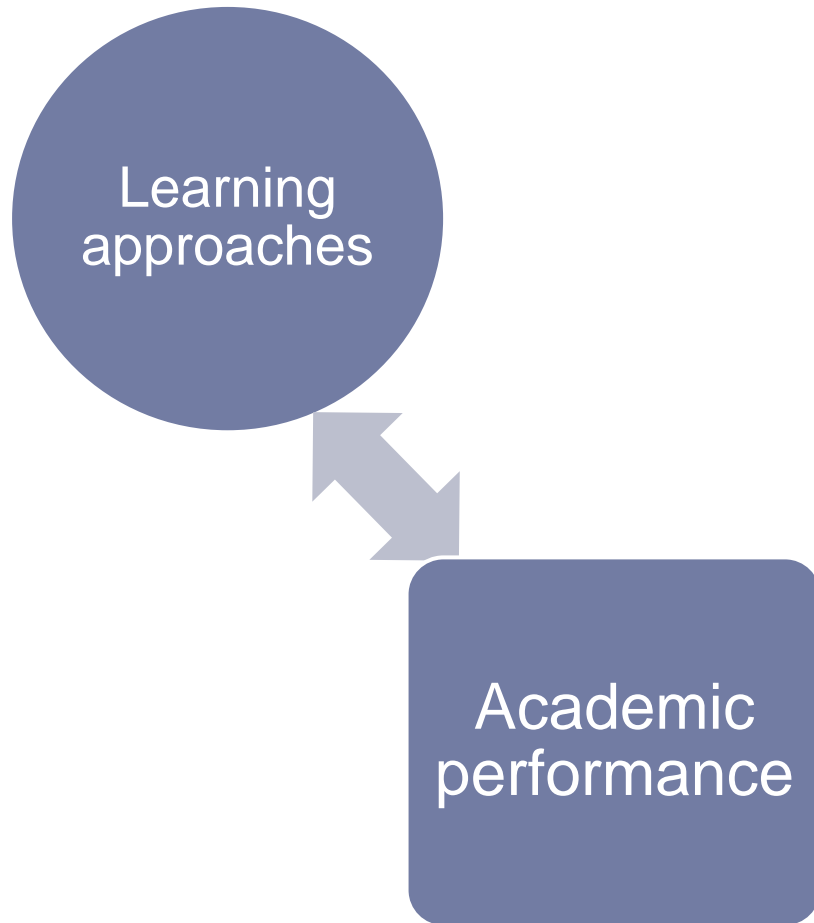


What are learning approaches?

▶ Deep and surface learning

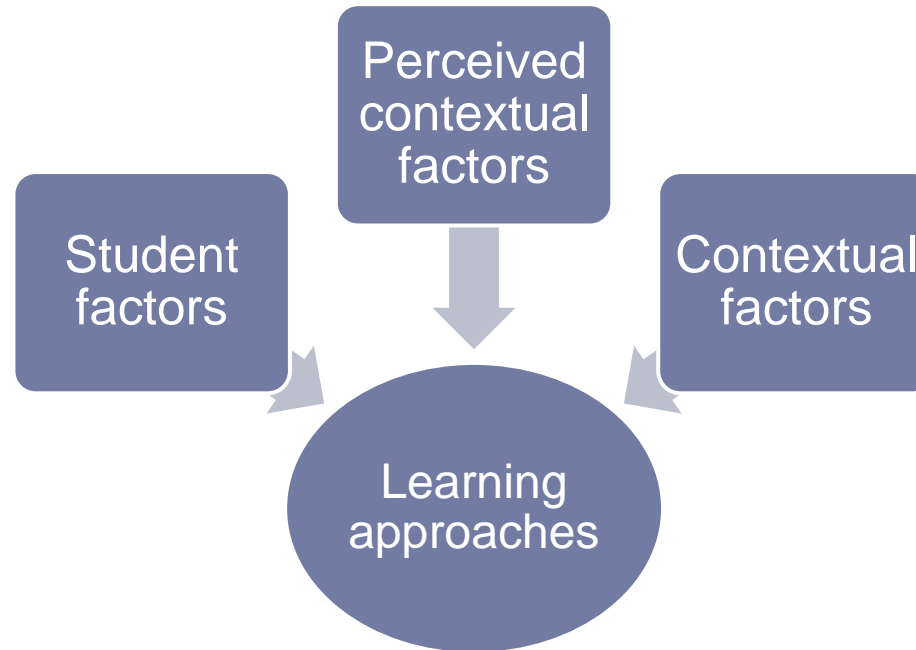
Deep approach	Surface approach
Understand meaning	Reproduce content
Relate information to prior knowledge	Memorize
Looking for underlying principles	Rote learning
Critically evaluate knowledge and conclusions	Study to pass the test
Intrinsic interest	Fear of failure

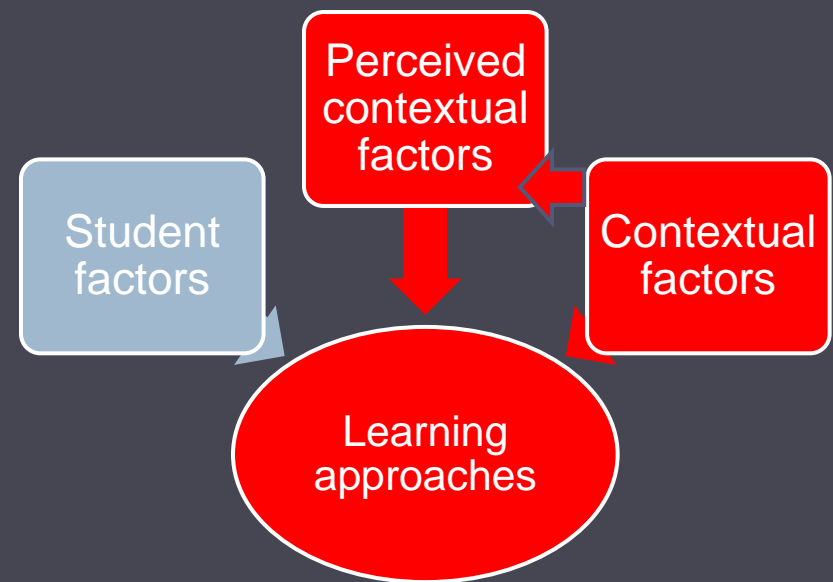
Performance and learning approaches



- ▶ Students' use of deep learning approach predicts academic performance
- ▶ Students scoring higher on high stakes clinical performance exams used deeper approaches than students scoring lower

Factors impacting learning approach





Research Question and Aims

Question de recherche

What are the respective impacts of an integrated curriculum and of a PBL pedagogical format on medical students' learning approaches?

Objectives

1. Compare medical students' perception of various educational contexts, integrated or not, and PBL based or not.
2. Investigate whether and how the context and its perception impact students' learning approaches.





Methodology

Educational context

	LYON	LAUSANNE	GENEVA
study year	1	1	1
curriculum	modules not integrated	modules integrated	modules integrated
learning format	lectures	lectures	lectures
assessment	MCQ	MCQ	MCQ
selection	21%	43%	32%
N	295	362	250



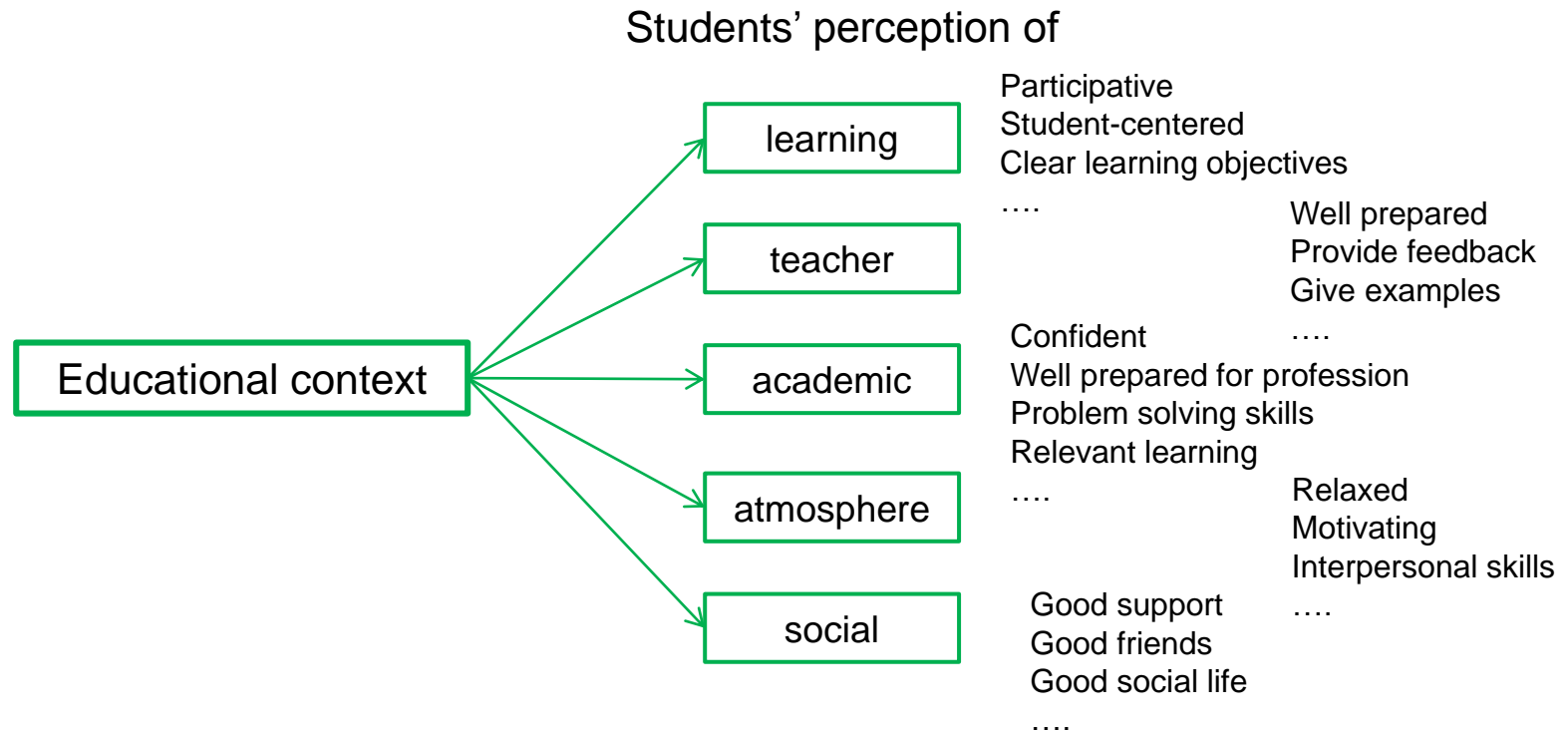
Educational context

	LYON	LAUSANNE	GENEVA	GENEVA
study year	1	1	1	2-3
curriculum	modules not integrated	modules integrated	modules integrated	modules integrated
learning format	lectures	lectures	lectures	PBL
assessment	MCQ	MCQ	MCQ	MCQ + oral + OSCE
selection	21%	43%	32%	98%
N	295	362	250	487



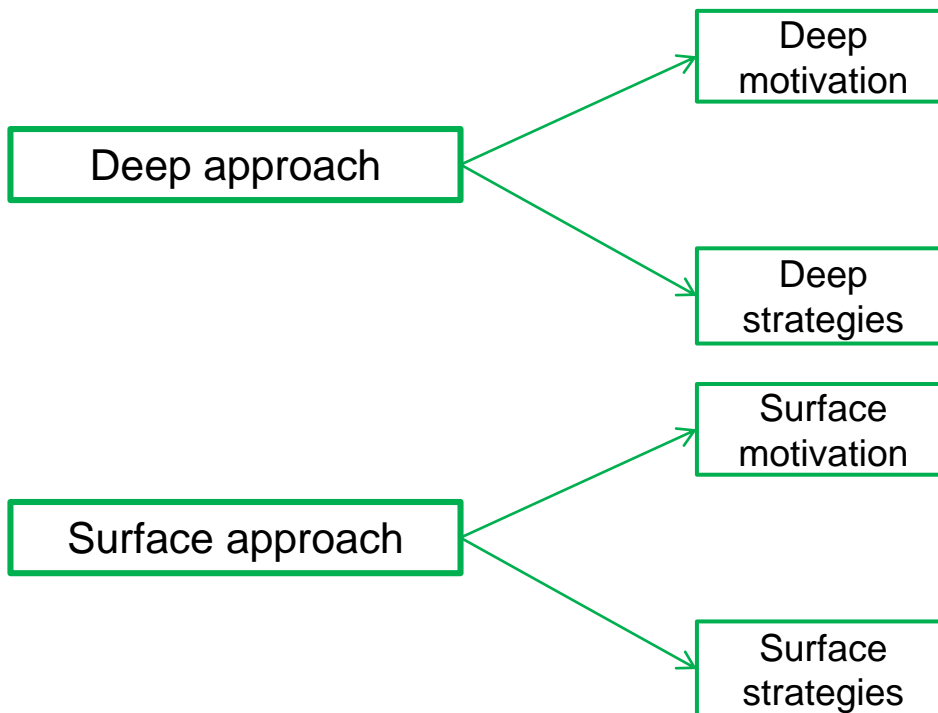
Tool to measure the educational context

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



Tool to measure the learning approaches

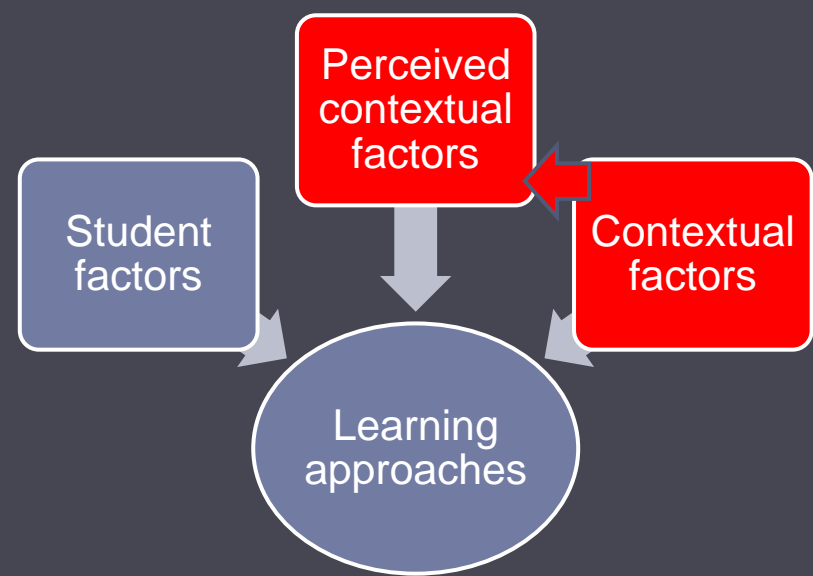
- **R-SPQ-2F: Revised two-factor Study Process Questionnaire**
- 20 items, french translation, validated by exploratory and confirmatory factor analysis (minus 2 items)



Statistical analysis

- ▶ Anovas and Tukey HSD test to compare the 4 contexts
- ▶ “Path Analysis” to test models of the impact of the educational context and of its perception by students on their learning approaches



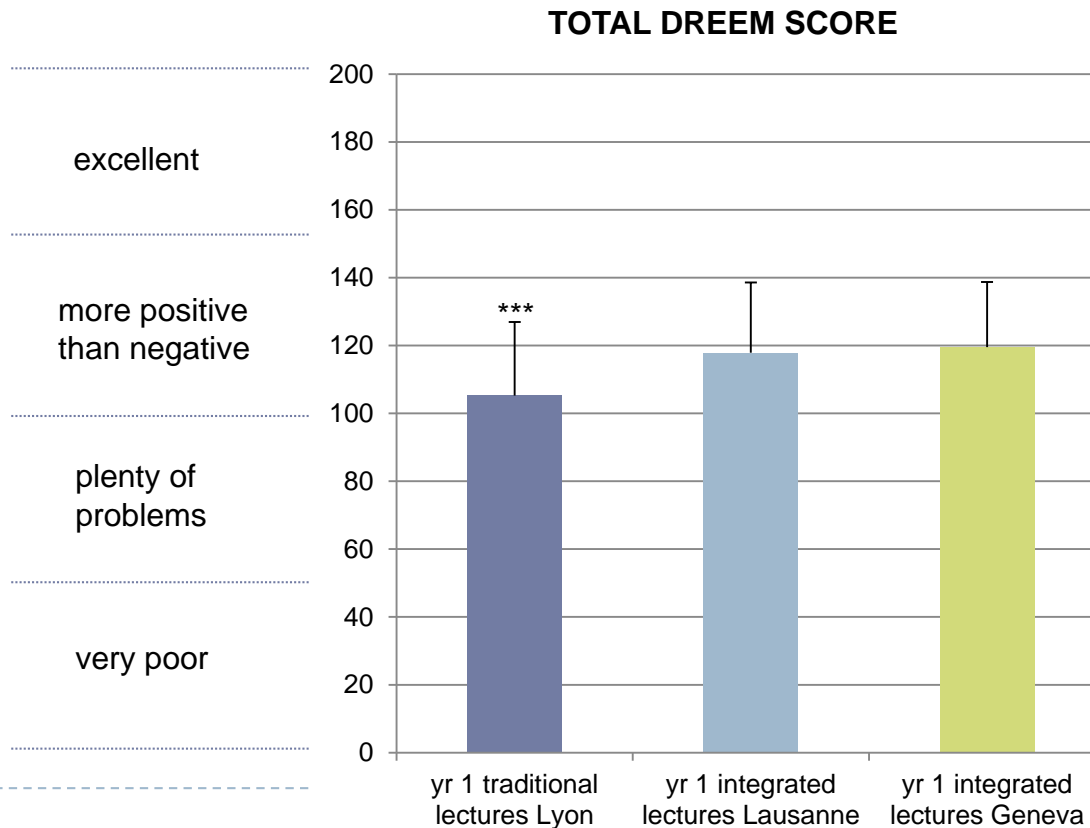


How do students perceive their educational context?

How do students perceive their educational context?

Students' perception of the educational context is better in integrated curricula

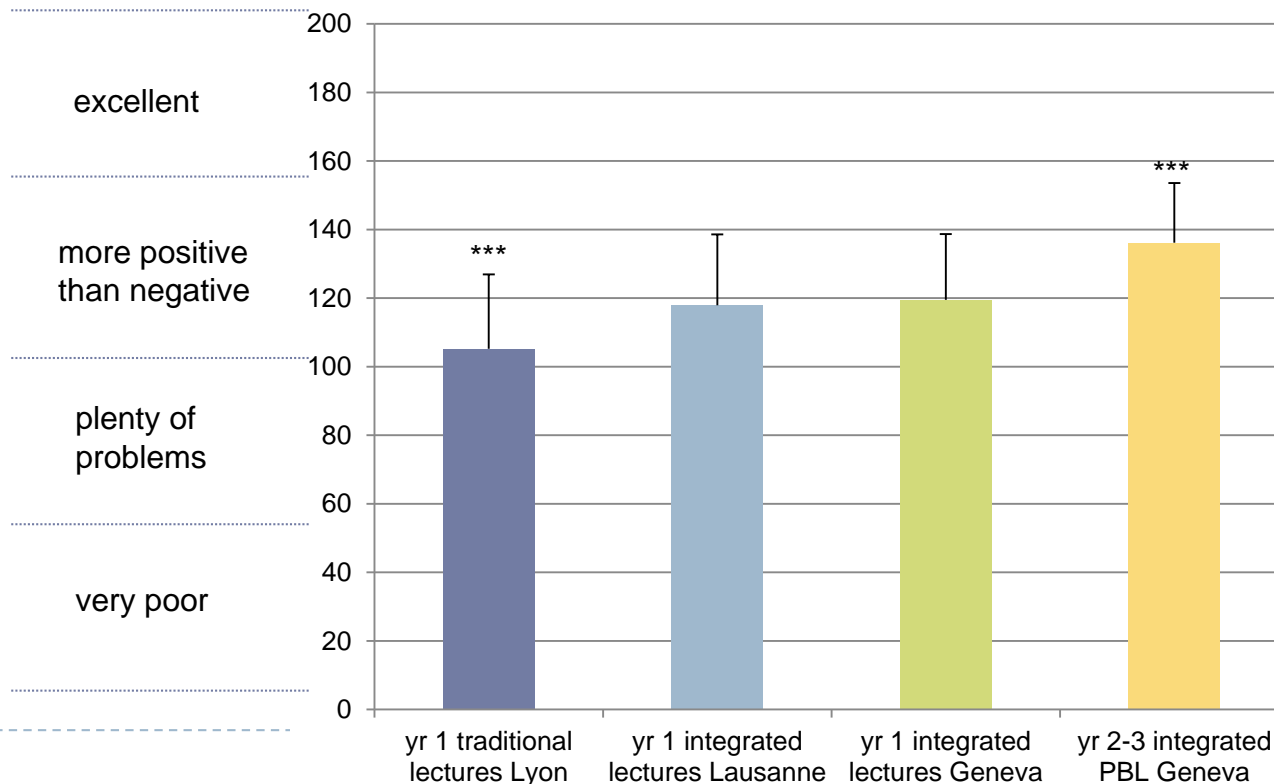
	LYON	LAUSANNE	GENEVA
Study year	1	1	1
curriculum	Traditional lectures	Integrated lectures	Integrated lectures
N	295	362	250

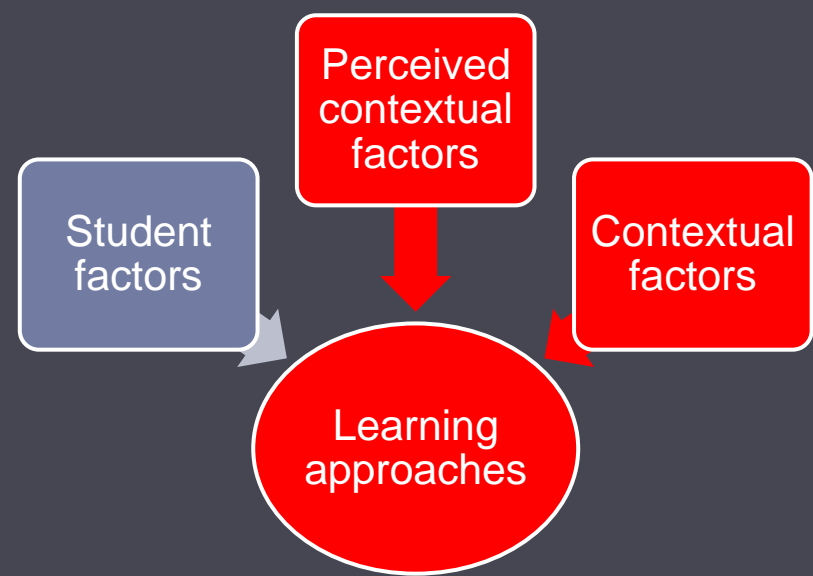


... and still better with PBL

	LYON	LAUSANNE	GENEVA	GENEVA
Study year	1	1	1	2-3
curriculum	Traditional lectures	Integrated lectures	Integrated lectures	Integrated PBL
N	295	362	250	487

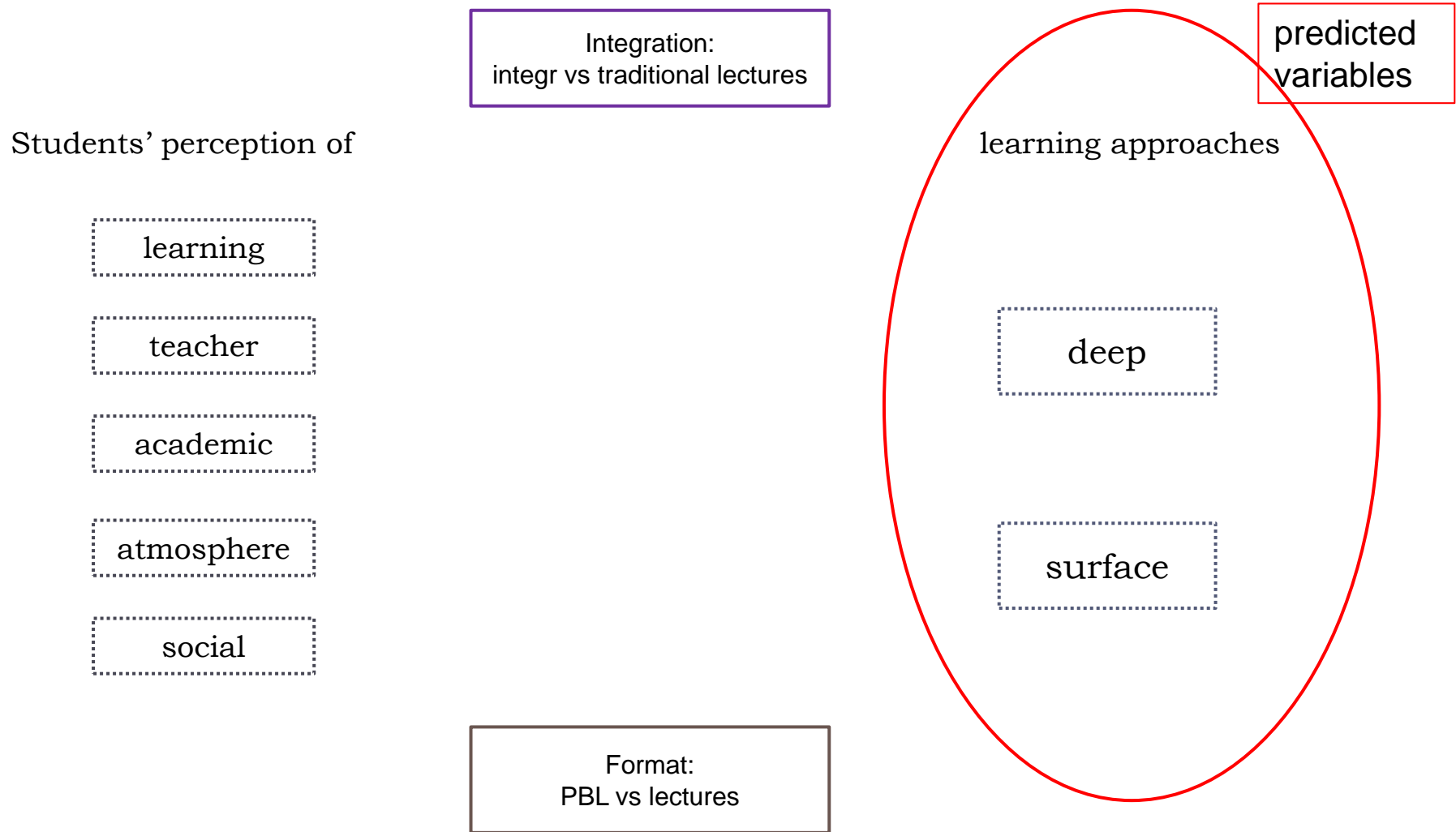
TOTAL DREEM SCORE





Do context and perceived context influence students' learning approaches?

Modelization



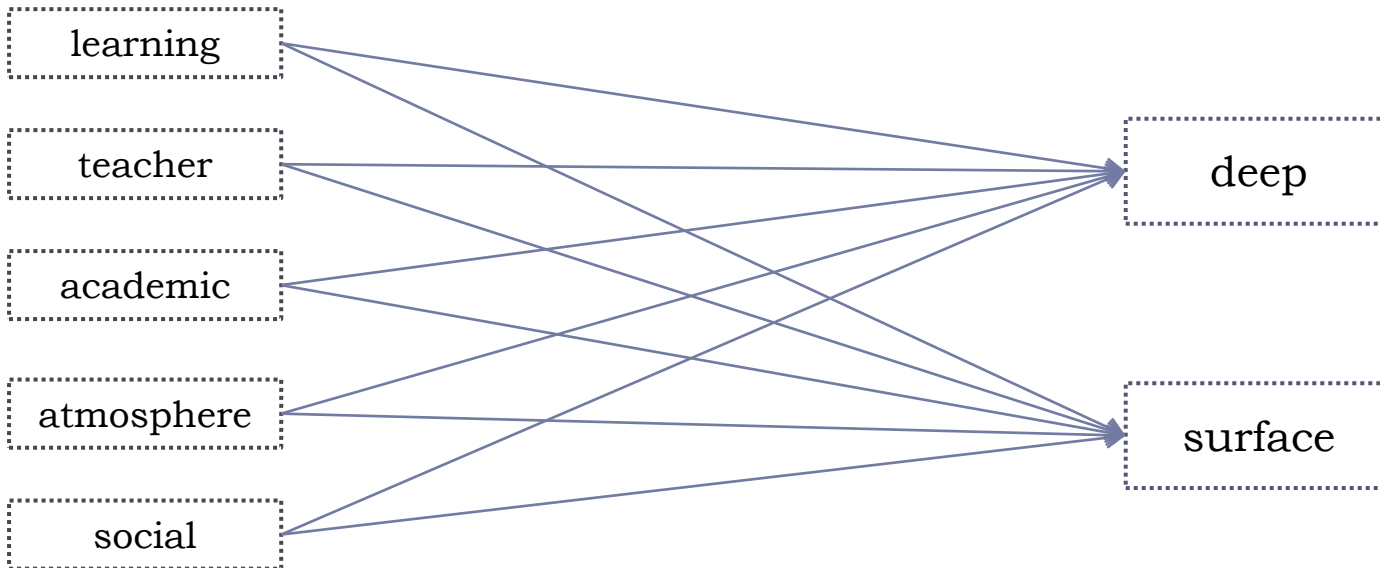
▶ Path analysis; n=1394

Modelization

Integration:
integr vs traditional lectures

Students' perception of

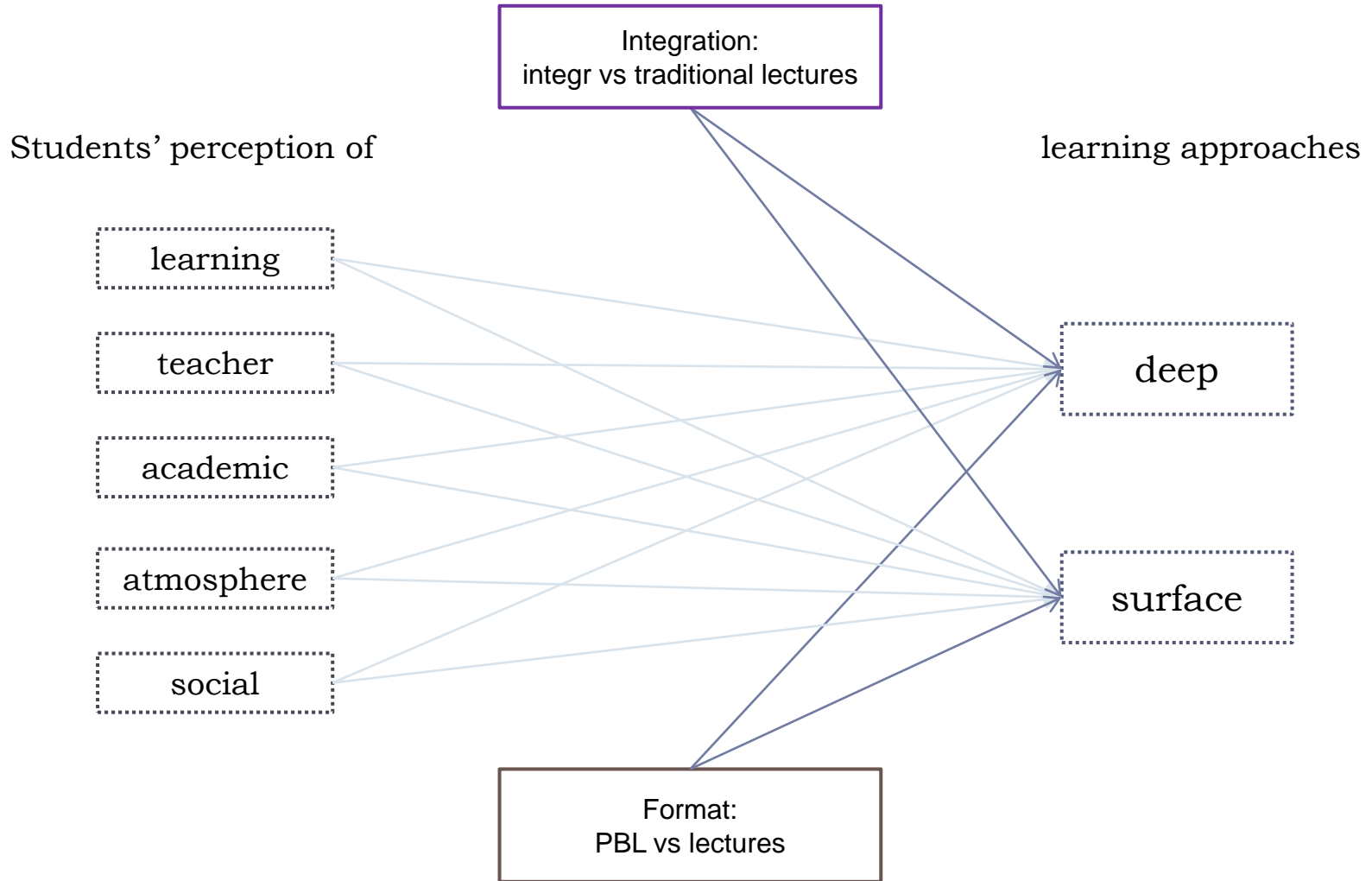
learning approaches



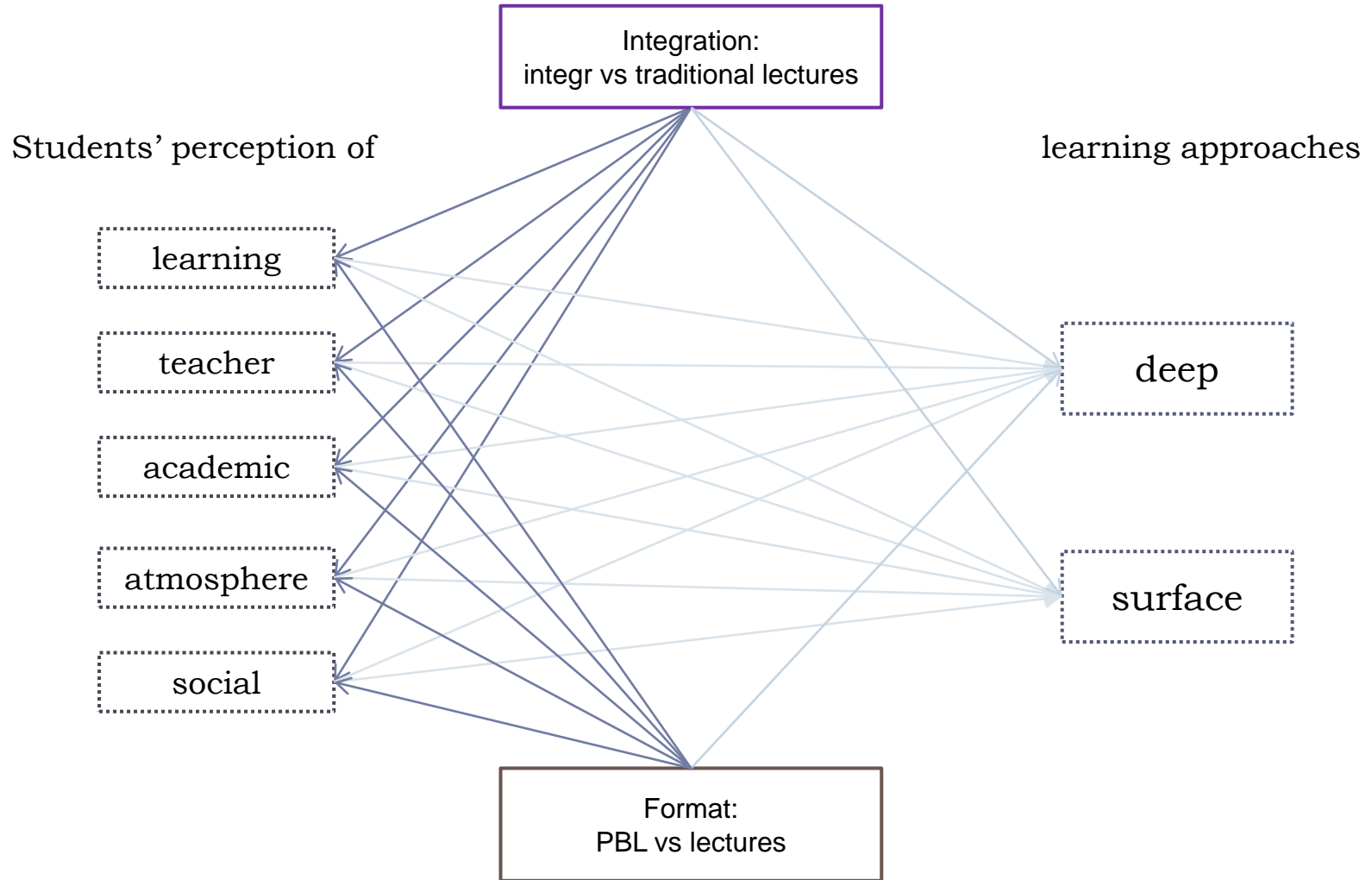
Format:
PBL vs lectures



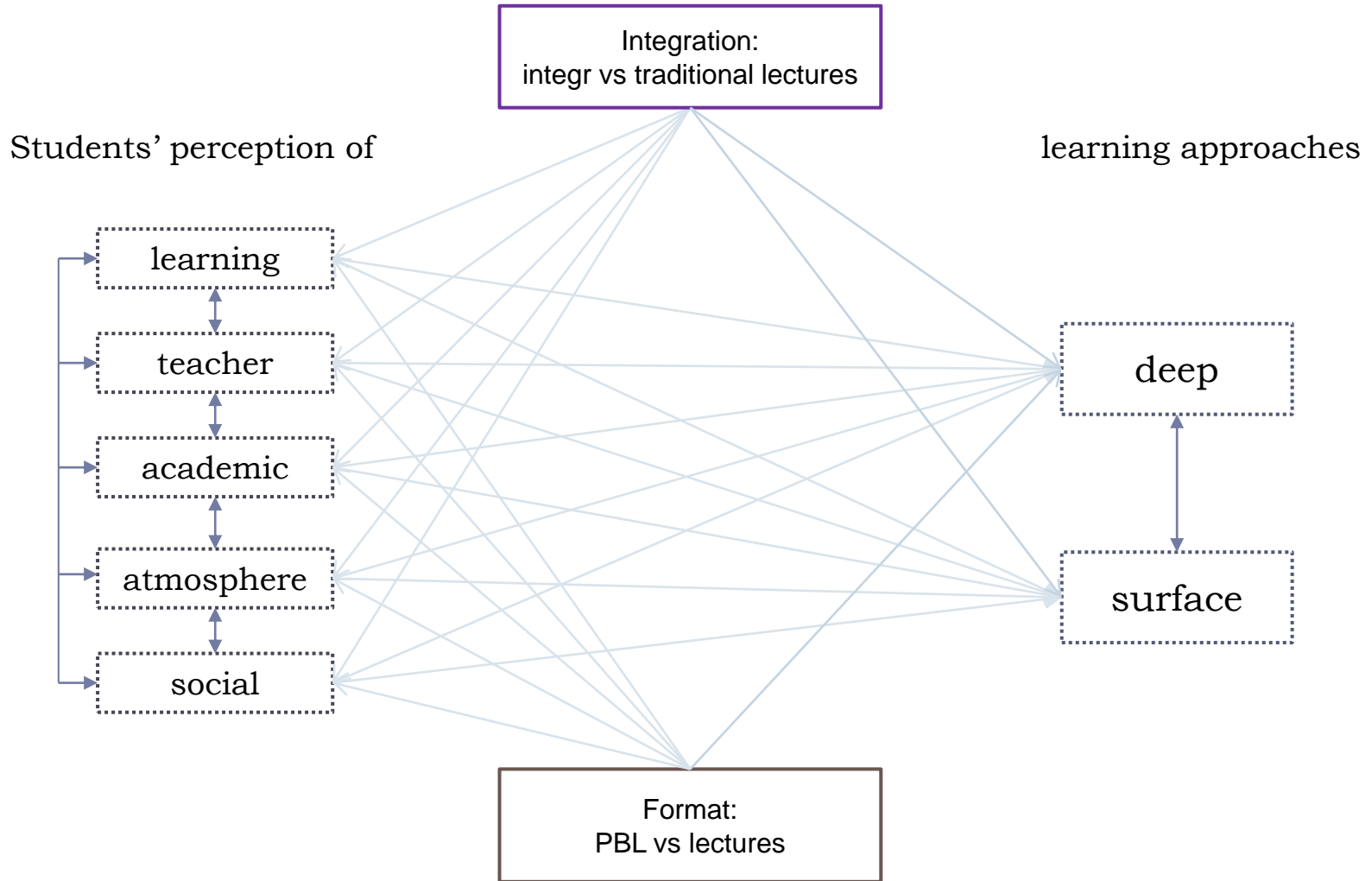
Modelization



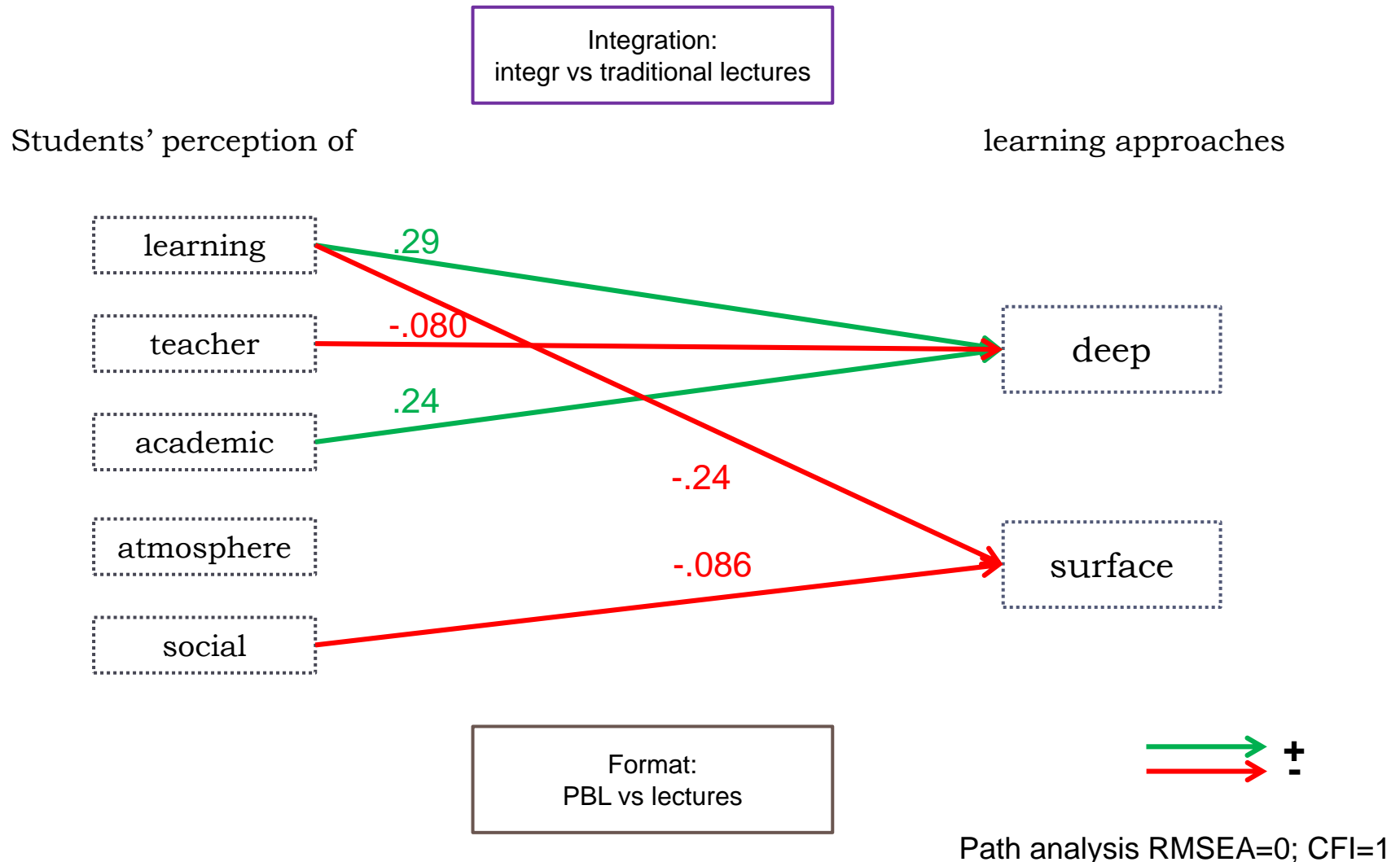
Modelization



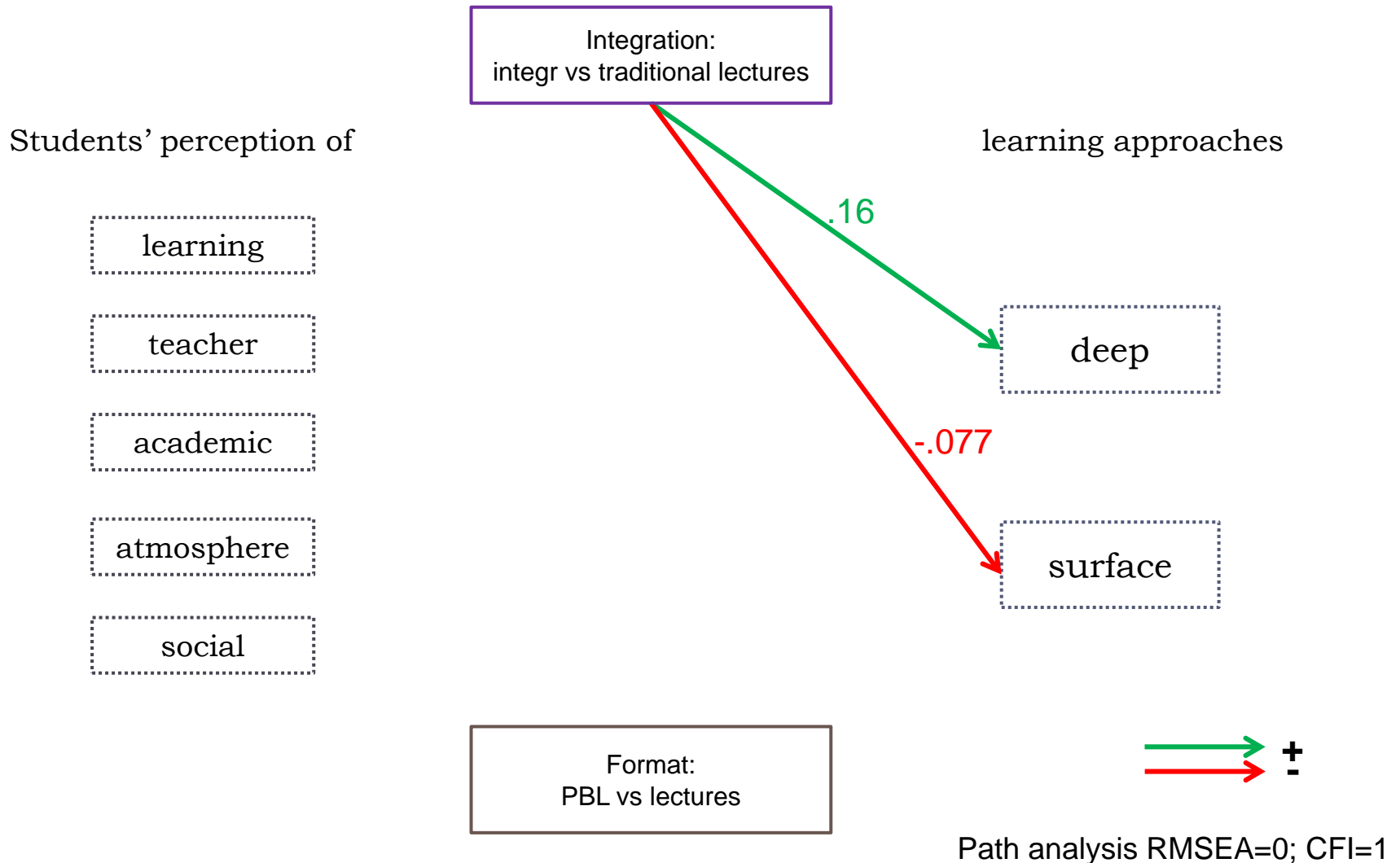
Modelization



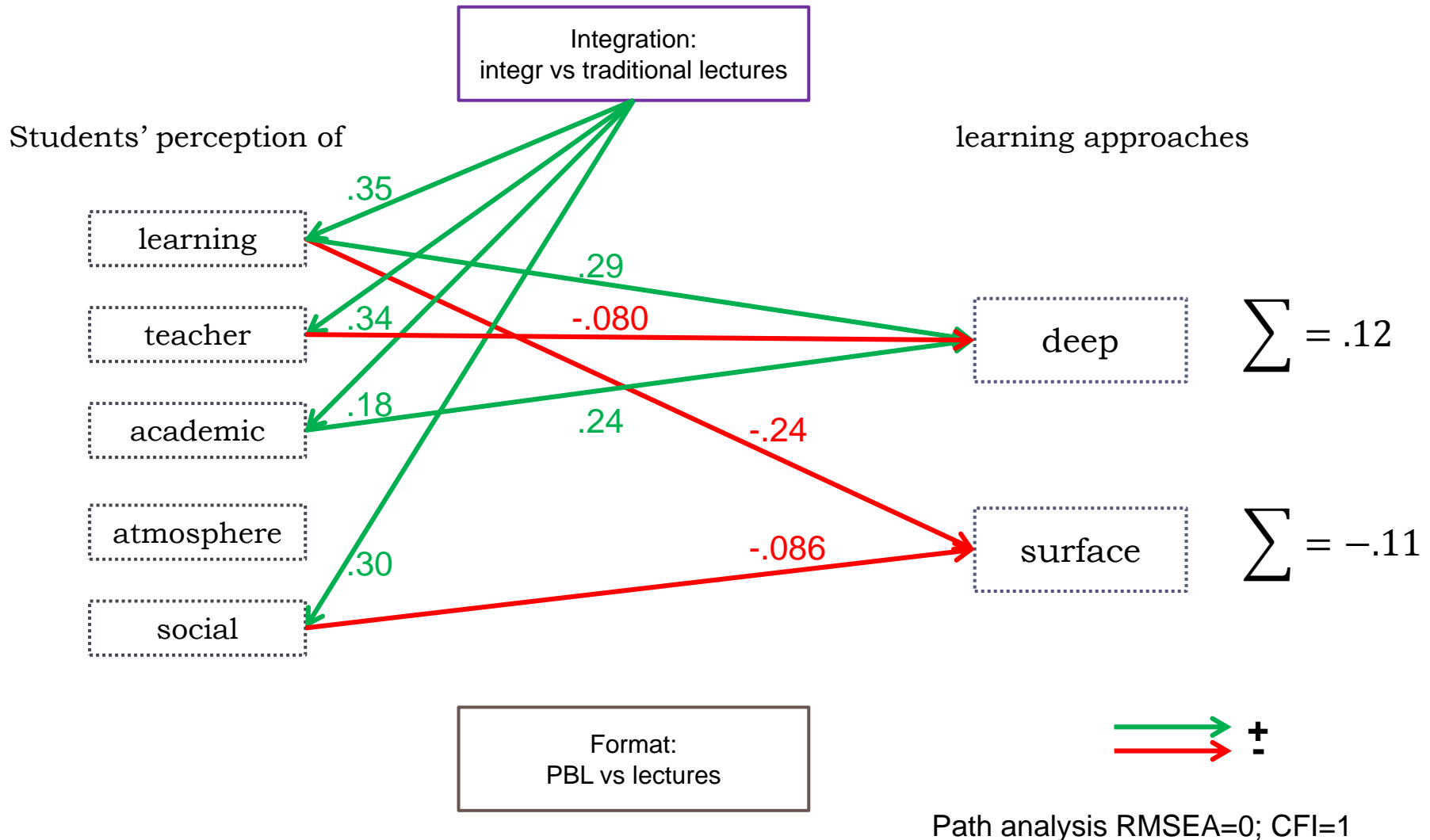
Results 1: students' perception of the educational context impacts their learning approaches



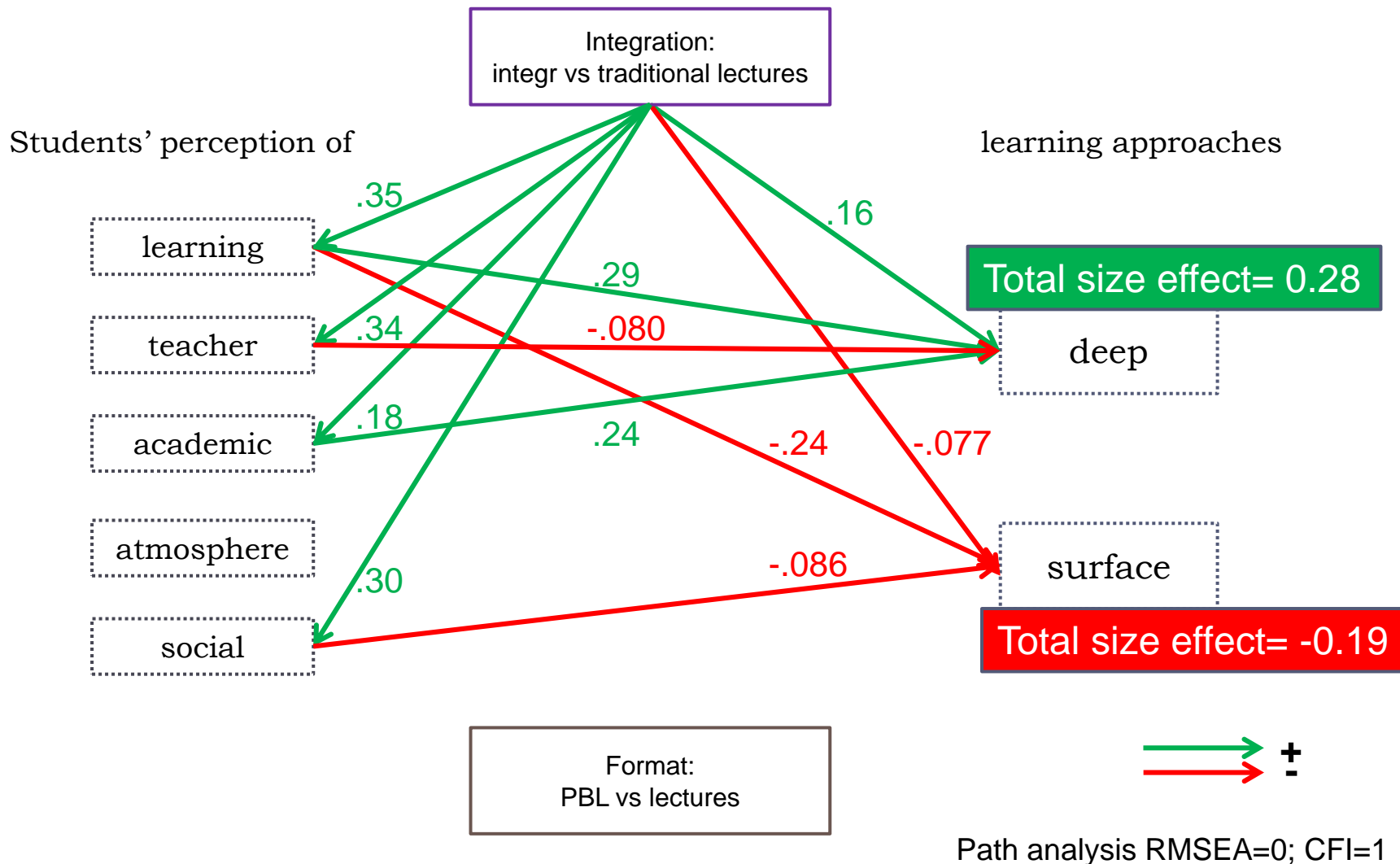
Results 2: integration increases deep and decreases surface approaches (direct effect)



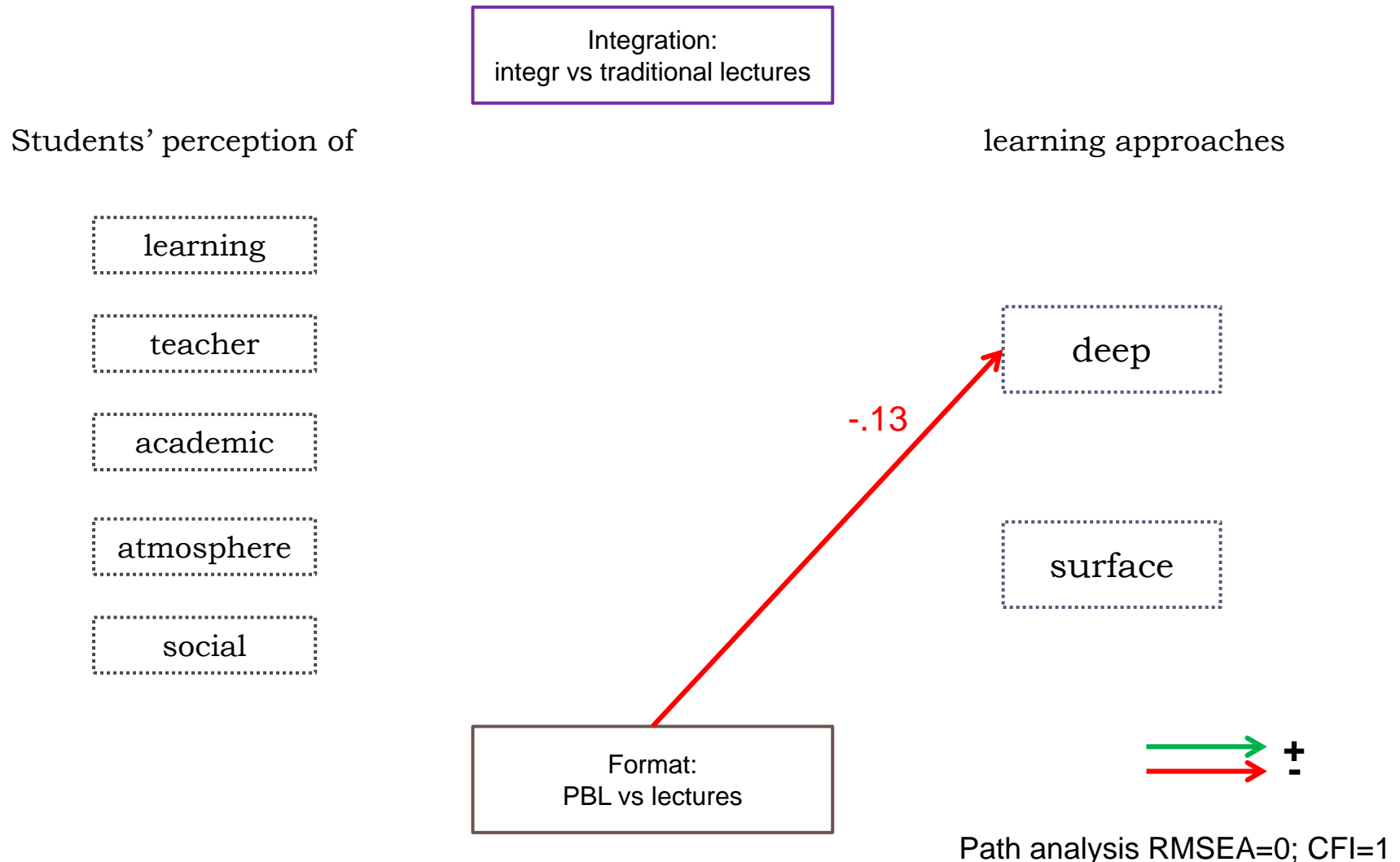
Results 2: integration increases deep and decreases surface approaches (indirect effects)



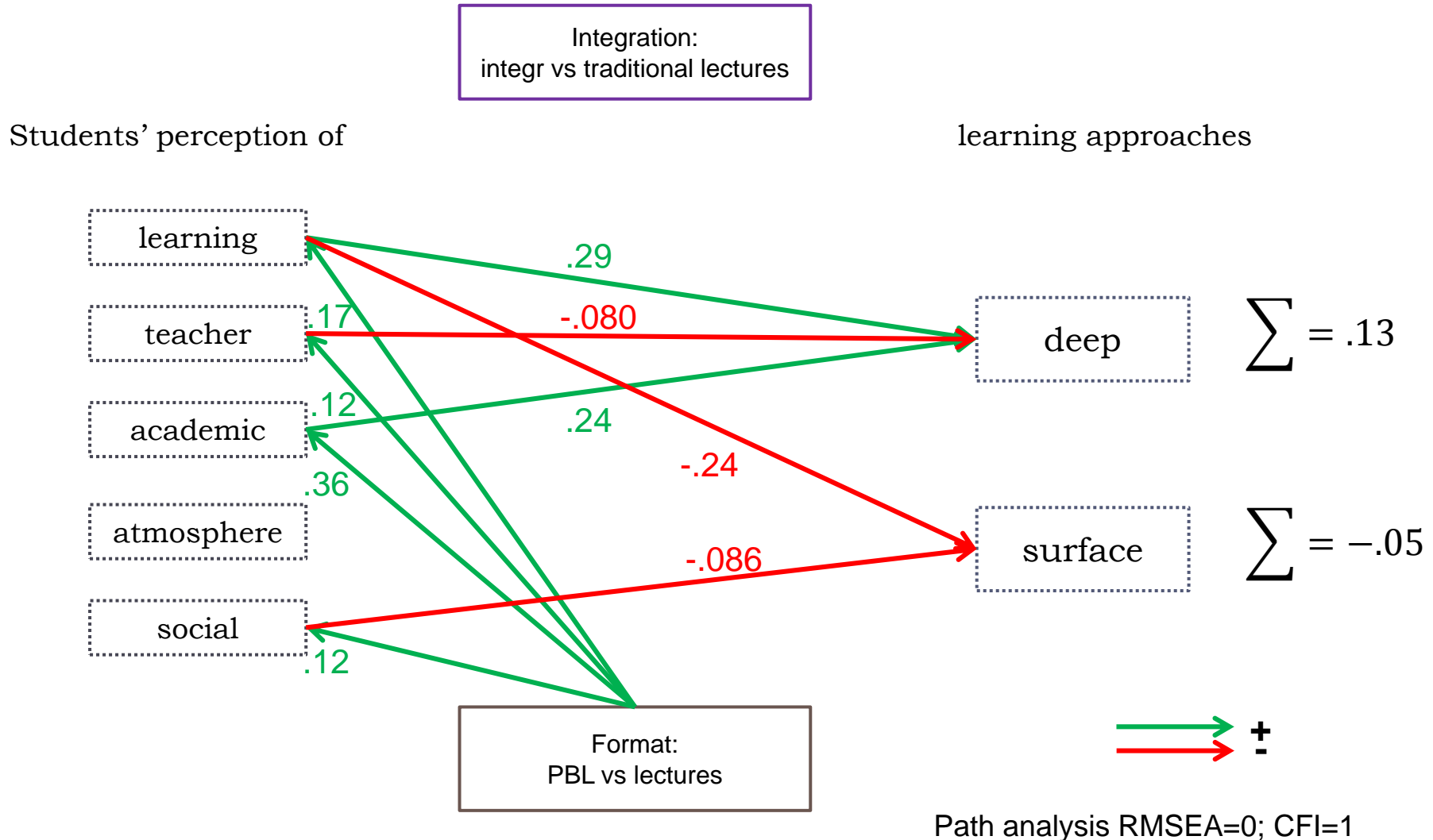
Results 2: integration increases deep and decreases surface approaches (direct and indirect effects)



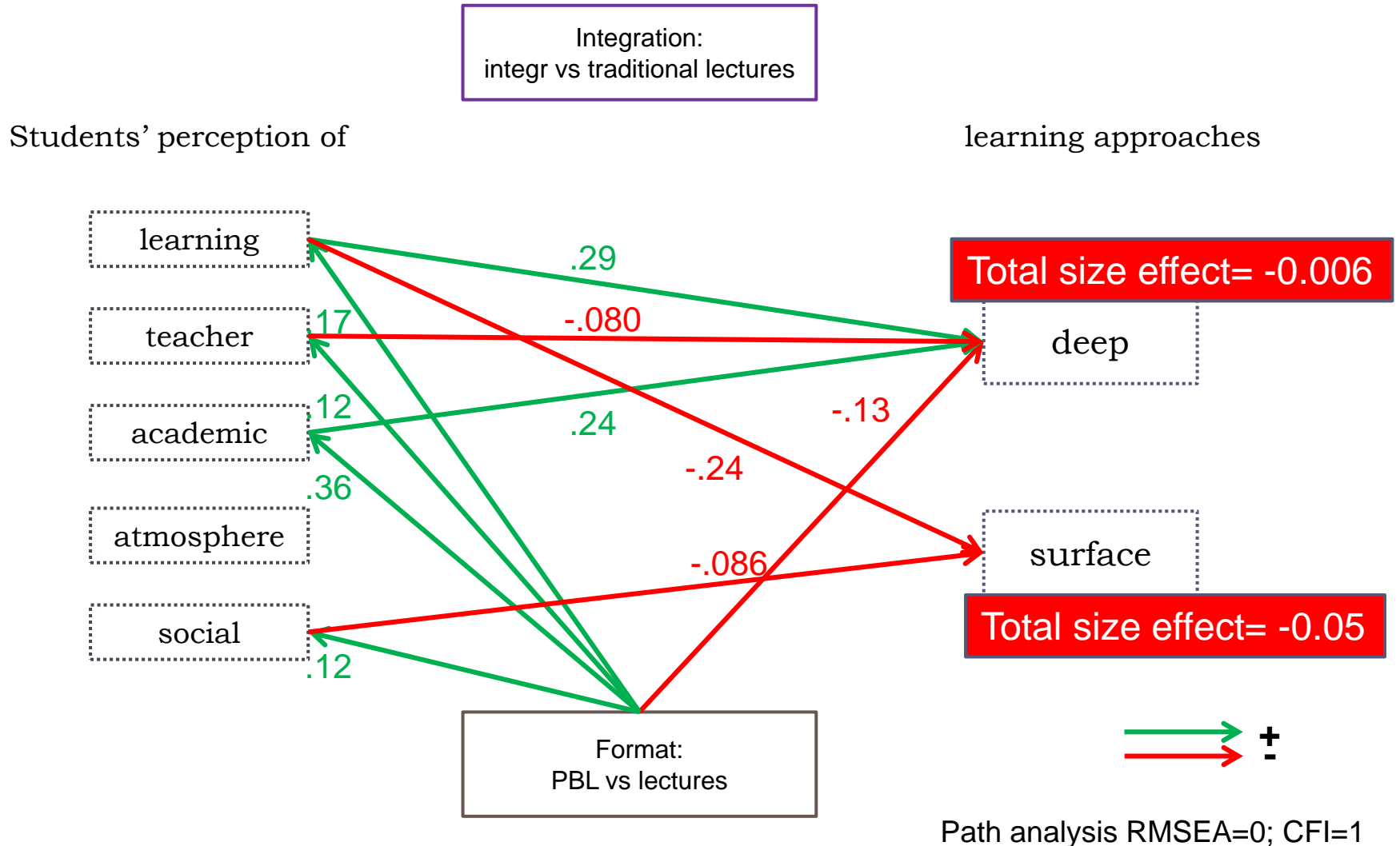
Results 3: PBL decreases deep approach (direct effect)



Results 3: PBL increases deep and decreases surface approaches (indirect effects)



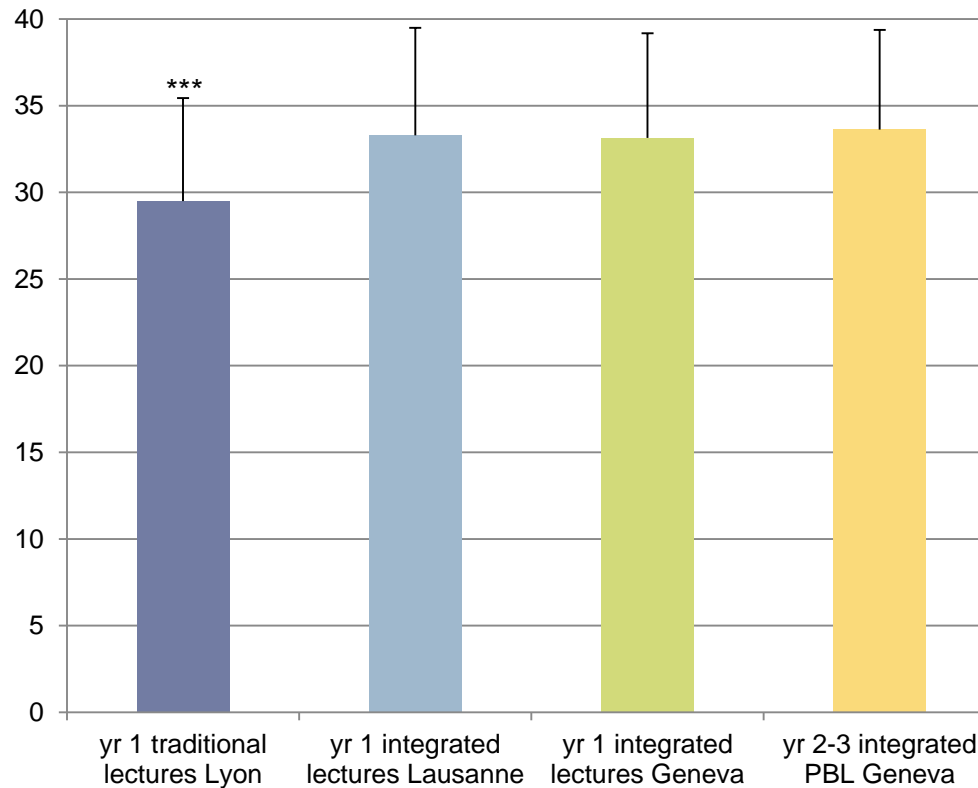
Results 3: PBL has a very weak impact on learning approaches (direct and indirect effects)



Summary: PBL has no added effect on deep approaches compared to a lecture-based integrated curriculum

	LYON	LAUSANNE	GENEVA	GENEVA
Study year	1	1	1	2-3
curriculum	Traditional lectures	Integrated lectures	Integrated lectures	Integrated PBL
N	295	362	250	487

DEEP APPROACH



Discussion and conclusion

- ▶ Our study supports the idea that students' perception of their educational context influences their learning approach.
- ▶ Integrating the curriculum could be more effective in increasing the use of deep approach than the PBL format.
- ▶ Take home message: Lecture-based curricula can significantly improve students' use of deep learning approaches, provided effort is focused on integrating.



Thank you for your attention

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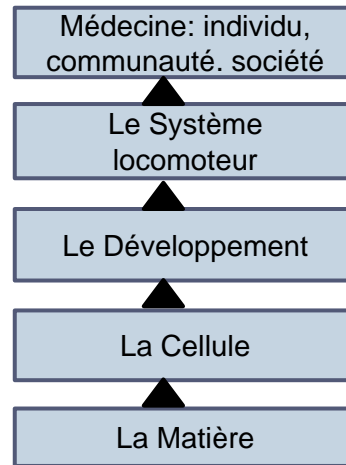
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Curriculum intégré?

1^{ère} année Lyon
(11 modules)



1^{ère} année Lausanne
(5 modules)



1^{ère} année Genève
(5 modules et 1 cas de liaison)

