A new faculty development approach for PBL tutors:

Self-reflection and peer-feedback improve teaching skills

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Tutor role in Problem Based Learning

Create optimal conditions for student learning

- stimulate cognitive activities (elaborating, making connections, synthesizing, and integrating knowledge)
- help to identify learning needs and resources
- favour monitoring of student learning
- provide feedback
- facilitate group process

Effective faculty development activities

- suit the needs of individuals
- encourage experiential learning
- provide feedback
- use strategies that stimulate reflection

Peer coaching and self-reflection

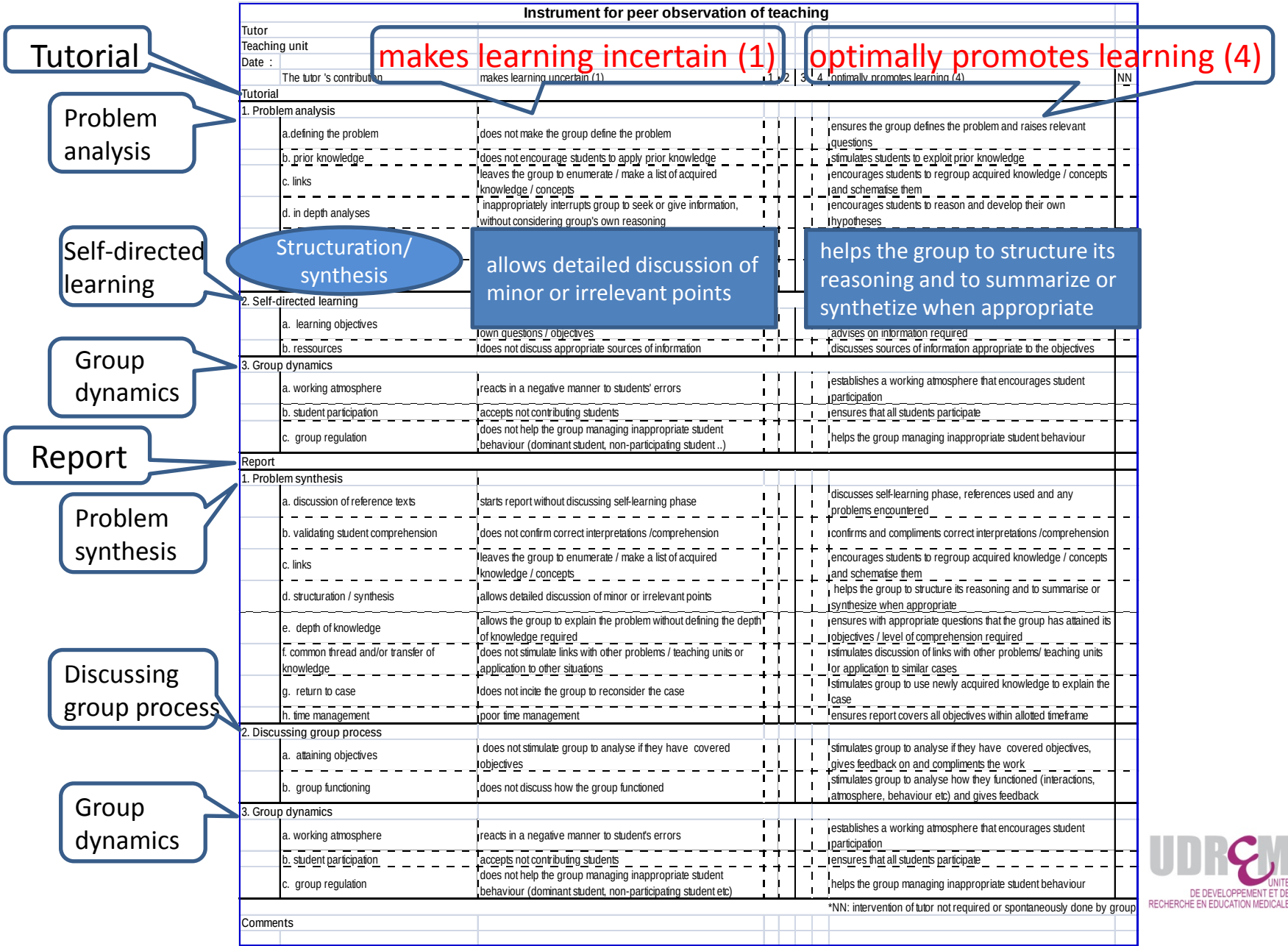
Peer coaching

- meets individual needs
- promotes collegiality
- based on feedback
- encourages self-reflection

Aim of the study

- Pilot testing an approach based on peer coaching and self-reflection with PBL tutors
- Design an instrument to observe the tutorial
- Explore the efficiency of the approach on tutor teaching skills

Instrument



Instrument for peer observation of teaching

Tutor
Teaching unit
Date :

The tutor 's contribution	makes learning uncertain (1)	1	2	3	4	optimally promotes learning (4)	NN
Tutorial							
1. Problem analysis							
a.defining the problem	does not make the group define the problem					ensures the group defines the problem and raises relevant questions	
b. prior knowledge	does not encourage students to apply prior knowledge					stimulates students to exploit prior knowledge	
c. links	leaves the group to enumerate / make a list of acquired knowledge / concepts					encourages students to regroup acquired knowledge / concepts and schematise them	
d. in depth analyses	inappropriately interrupts group to seek or give information, without considering group's own reasoning					encourages students to reason and develop their own hypotheses	
2. Self-directed learning							
a. learning objectives	own questions / objectives					advises on information required	
b. ressources	does not discuss appropriate sources of information					discusses sources of information appropriate to the objectives	
3. Group dynamics							
a. working atmosphere	reacts in a negative manner to students' errors					establishes a working atmosphere that encourages student participation	
b. student participation	accepts not contributing students					ensures that all students participate	
c. group regulation	does not help the group managing inappropriate student behaviour (dominant student, non-participating student ..)					helps the group managing inappropriate student behaviour	
Report							
1. Problem synthesis							
a. discussion of reference texts	starts report without discussing self-learning phase					discusses self-learning phase, references used and any problems encountered	
b. validating student comprehension	does not confirm correct interpretations /comprehension					confirms and compliments correct interpretations /comprehension	
c. links	leaves the group to enumerate / make a list of acquired knowledge / concepts					encourages students to regroup acquired knowledge / concepts and schematise them	
d. structuration / synthesis	allows detailed discussion of minor or irrelevant points					helps the group to structure its reasoning and to summarise or synthesize when appropriate	
e. depth of knowledge	allows the group to explain the problem without defining the depth of knowledge required					ensures with appropriate questions that the group has attained its objectives / level of comprehension required	
f. common thread and/or transfer of knowledge	does not stimulate links with other problems / teaching units or application to other situations					stimulates discussion of links with other problems/ teaching units or application to similar cases	
g. return to case	does not incite the group to reconsider the case					stimulates group to use newly acquired knowledge to explain the case	
h. time management	poor time management					ensures report covers all objectives within allotted timeframe	
2. Discussing group process							
a. attaining objectives	does not stimulate group to analyse if they have covered objectives					stimulates group to analyse if they have covered objectives, gives feedback on and compliments the work	
b. group functioning	does not discuss how the group functioned					stimulates group to analyse how they functioned (interactions, atmosphere, behaviour etc) and gives feedback	
3. Group dynamics							
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c. group regulation	does not help the group managing inappropriate student behaviour (dominant student, non-participating student etc)					helps the group managing inappropriate student behaviour	

*NN: intervention of tutor not required or spontaneously done by group

Comments

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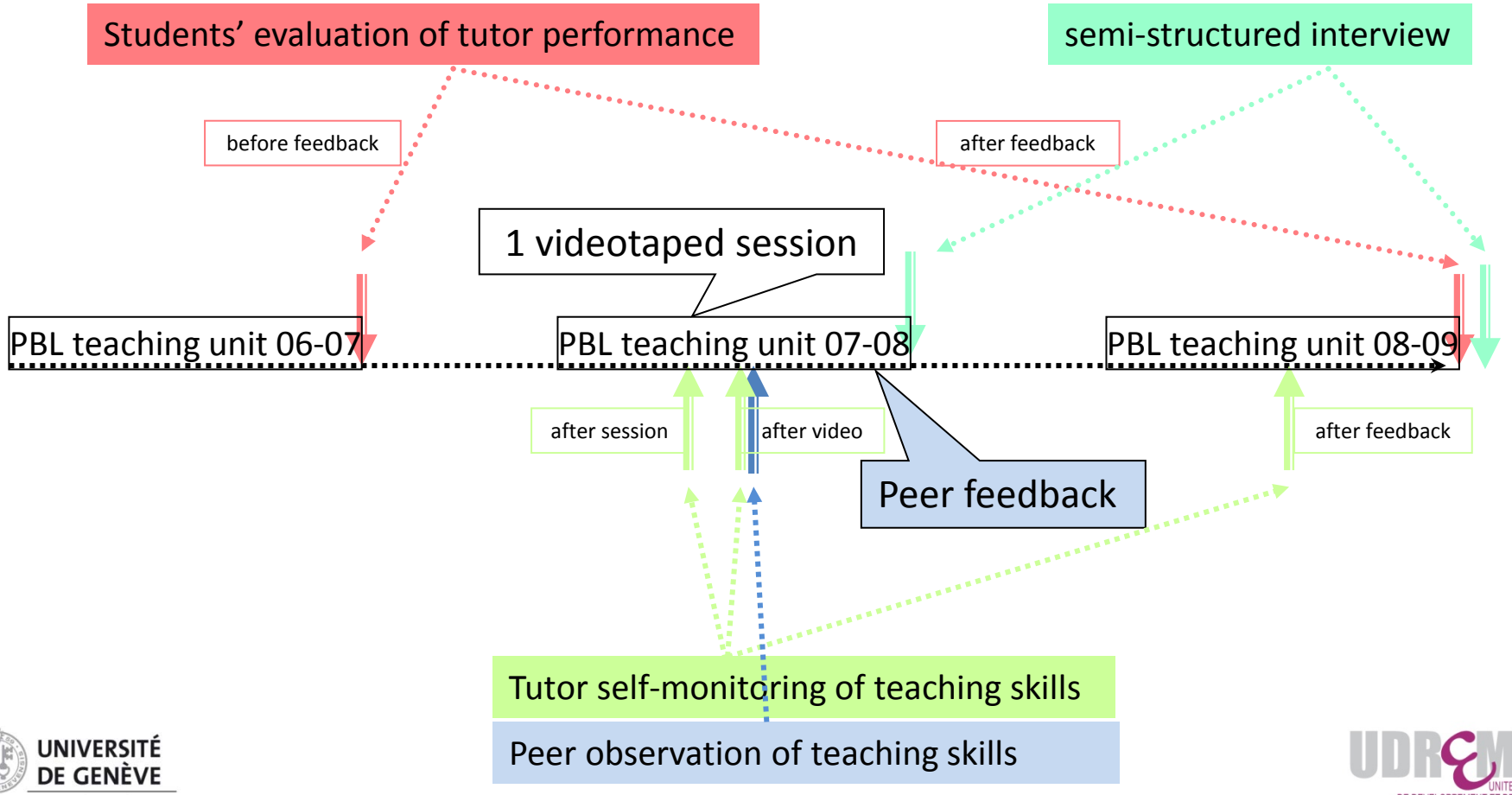
Research questions

1. Does « looking oneself in action » on a video and self-monitoring using the instrument encourage tutor self-reflection?
2. Does « peer feedback » improve tutor teaching skills?

Experimental design

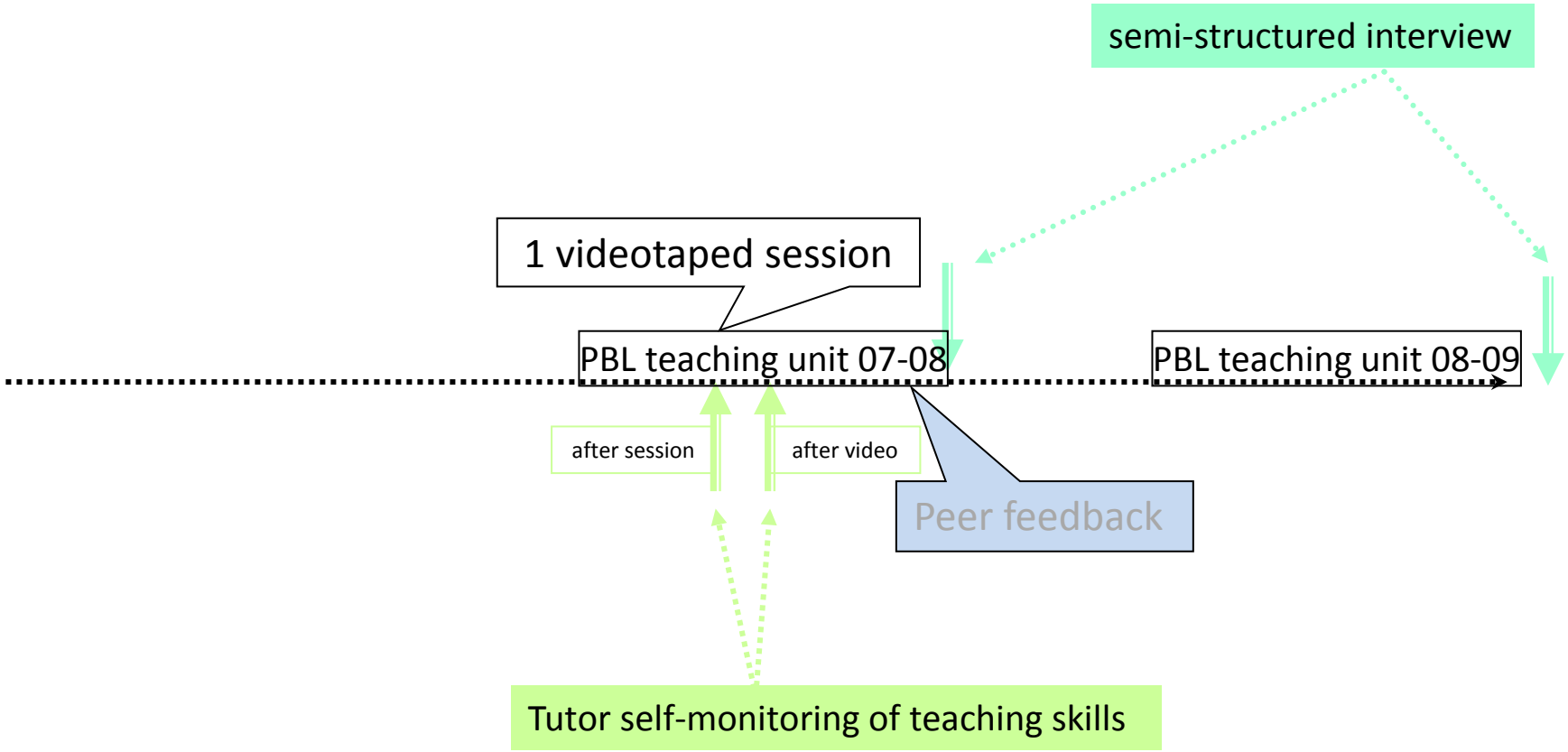


Participants

- *Observed tutors*
  21 PBL tutors
  - 15 experienced tutors (>10 years of tutoring experience)
  - 6 junior tutors (4 -6 years of tutoring experience)

- *Peer-observers*
  4 expert tutors (>10 years of experience)

1. Does « looking oneself in action » and self-monitoring using the instrument encourage tutor self-reflection?



1. Does « looking oneself in action » and self-monitoring using the instrument encourage tutor self-reflection?

Methods

Semi-structured interview

- Did « looking yourself in action » make you aware of your teaching strategies?

- Is the instrument useful as a reminder of the tutor role and as a tool for self-reflection ?

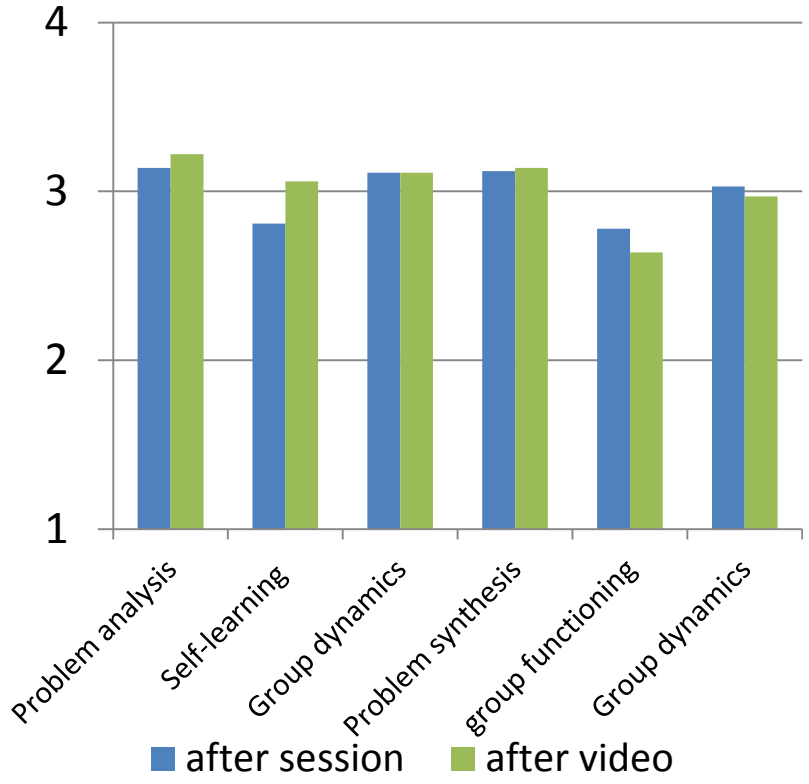
Results

- 83% of the tutors report that « looking oneself in action » makes aware of personal teaching strategies

- All tutors report that the instrument is very useful as a reminder of the tutor role and helps to self-reflect on personal teaching strategies

1. Does « looking oneself in action » and self-monitoring using the instrument encourage tutor self-reflection?

Methods: comparison of tutor self-monitoring before and after video

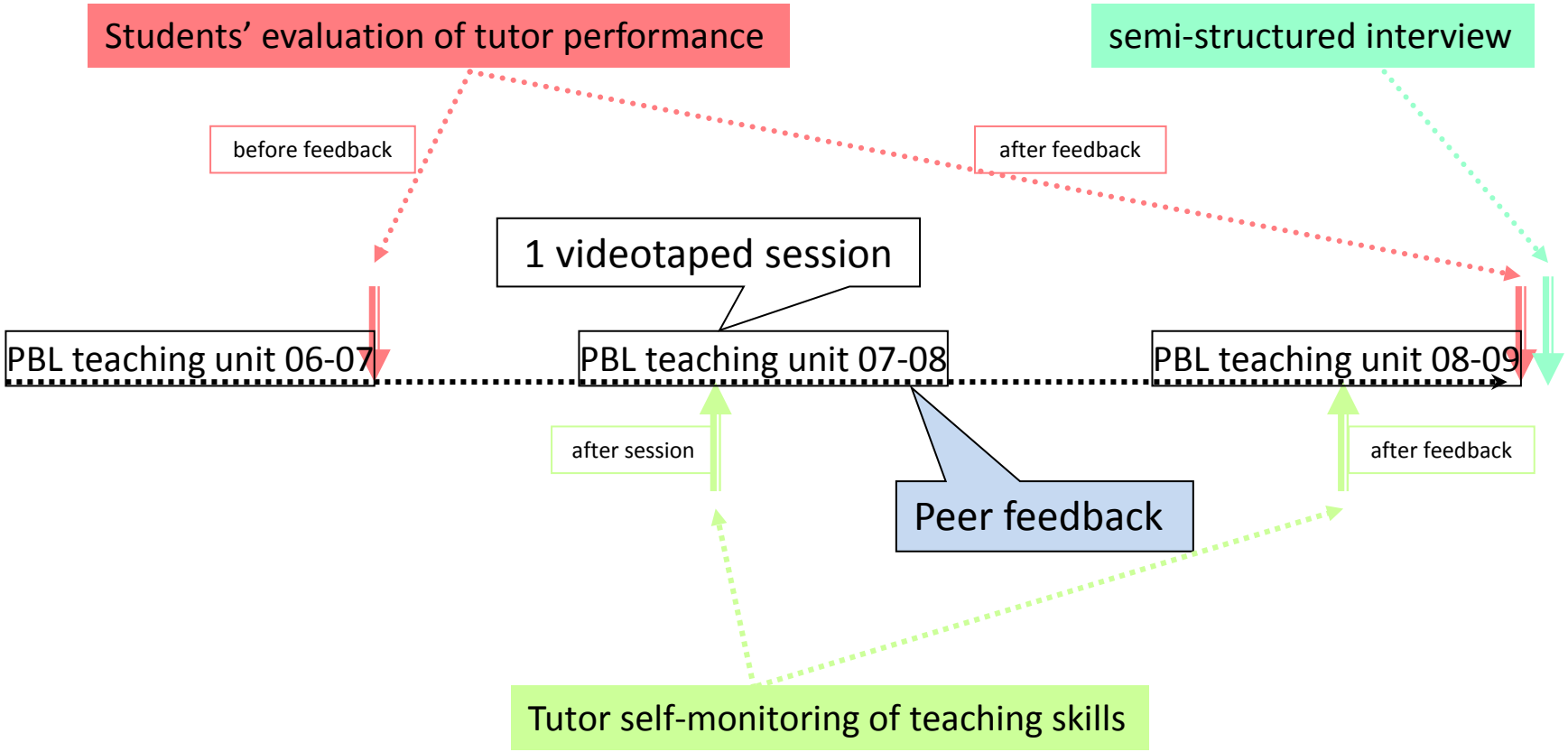


		after session	after video	p[a]
	nb tutors	18	18	
TUTORIAL PHASE	Problem analysis	3.14 ± 0.44	3.22 ± 0.58	0.579
	Self-directed learning	2.81 ± 0.93	3.06 ± 0.94	0.340
	Group dynamics	3.11 ± 0.60	3.11 ± 0.65	0.959
REPORTING PHASE	Problem synthesis	3.12 ± 0.44	3.14 ± 0.33	0.751
	Discussing group process	2.78 ± 0.69	2.64 ± 0.80	0.858
	Group dynamics	3.03 ± 0.58	2.97 ± 0.57	0.475

[a] : after video compared to before video, using Wilcoxon signed rank test
* : $p \leq 0.05$

Results: tutors self-monitor their teaching skills identically after « looking oneself in action »

2. Does « peer feedback » improve tutor teaching skills?



2. Does « peer feedback » improve tutor teaching skills?

Methods

Semi-structured interview

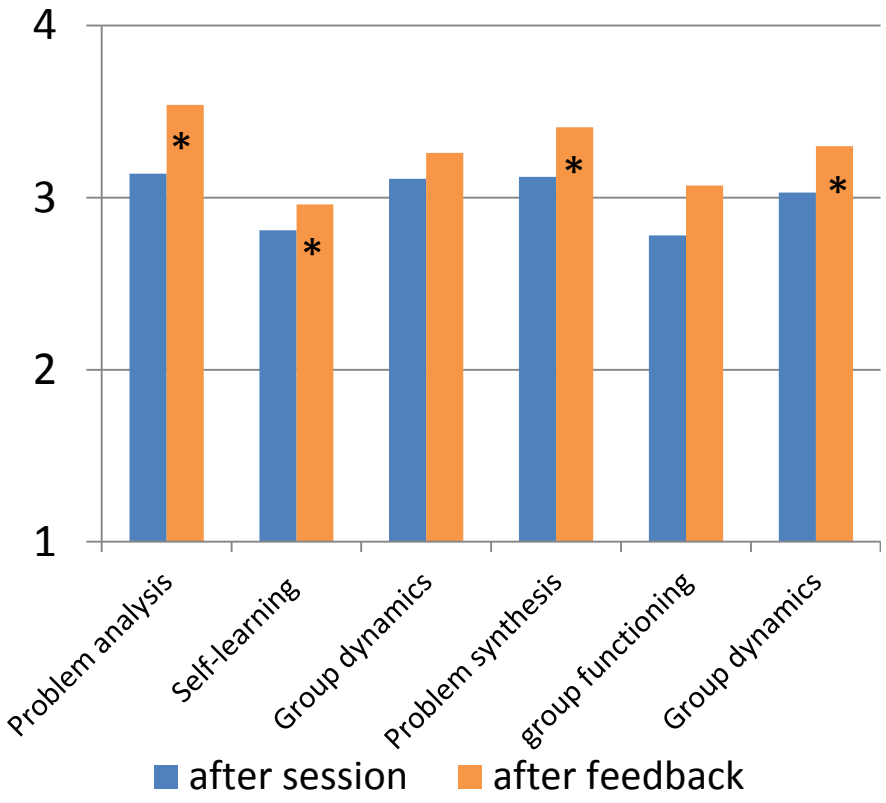
- Did you modify your teaching strategies after peer feedback?
- Do you estimate having improved?

Results

- 65% of the tutors modified their strategies
- 82% perceive to have improved

2. Does « peer feedback » improve tutor teaching skills?

Methods 1: comparison of tutor self-monitoring before and after peer feedback



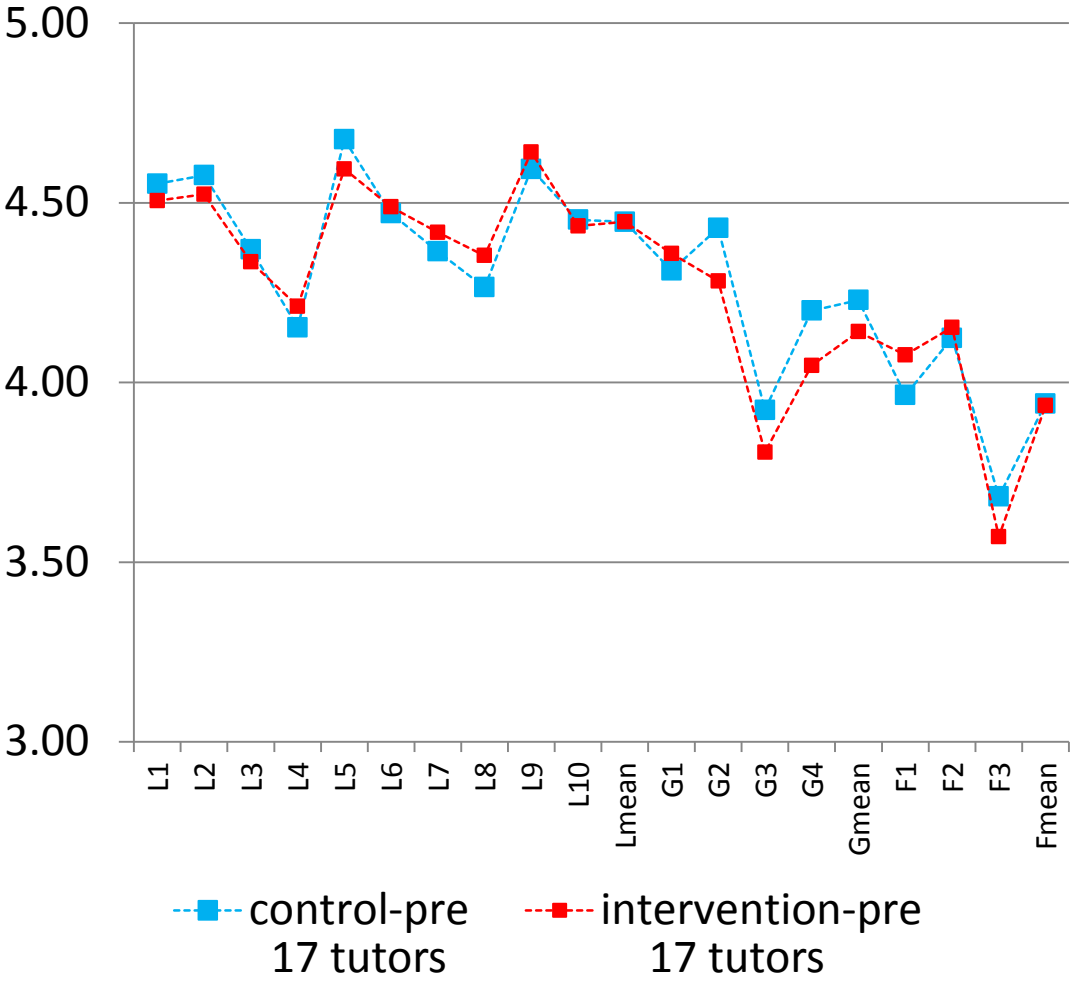
		after session	after feedback	p[b]
	nb tutors	18	14	
TUTORIAL PHASE	Problem analysis	3.14 ± 0.44	3.54 ± 0.37	0.004*
	Self-directed learning	2.81 ± 0.93	2.96 ± 0.72	0.031*
	Group dynamics	3.11 ± 0.60	3.26 ± 0.51	0.169
REPORTING PHASE	Problem synthesis	3.12 ± 0.44	3.41 ± 0.34	0.006*
	Discussing group process	2.78 ± 0.69	3.07 ± 0.58	0.119
	Group dynamics	3.03 ± 0.58	3.30 ± 0.52	0.012*

b: after feedback compared to before feedback, using Wilcoxon signed rank test
* : $p \leq 0.05$

Results 1: tutors self-monitor some teaching skills better after peer feedback

2. Does « peer feedback » improve tutor teaching skills?

Methods 2: student-rated tutor performance pre- and post-feedback



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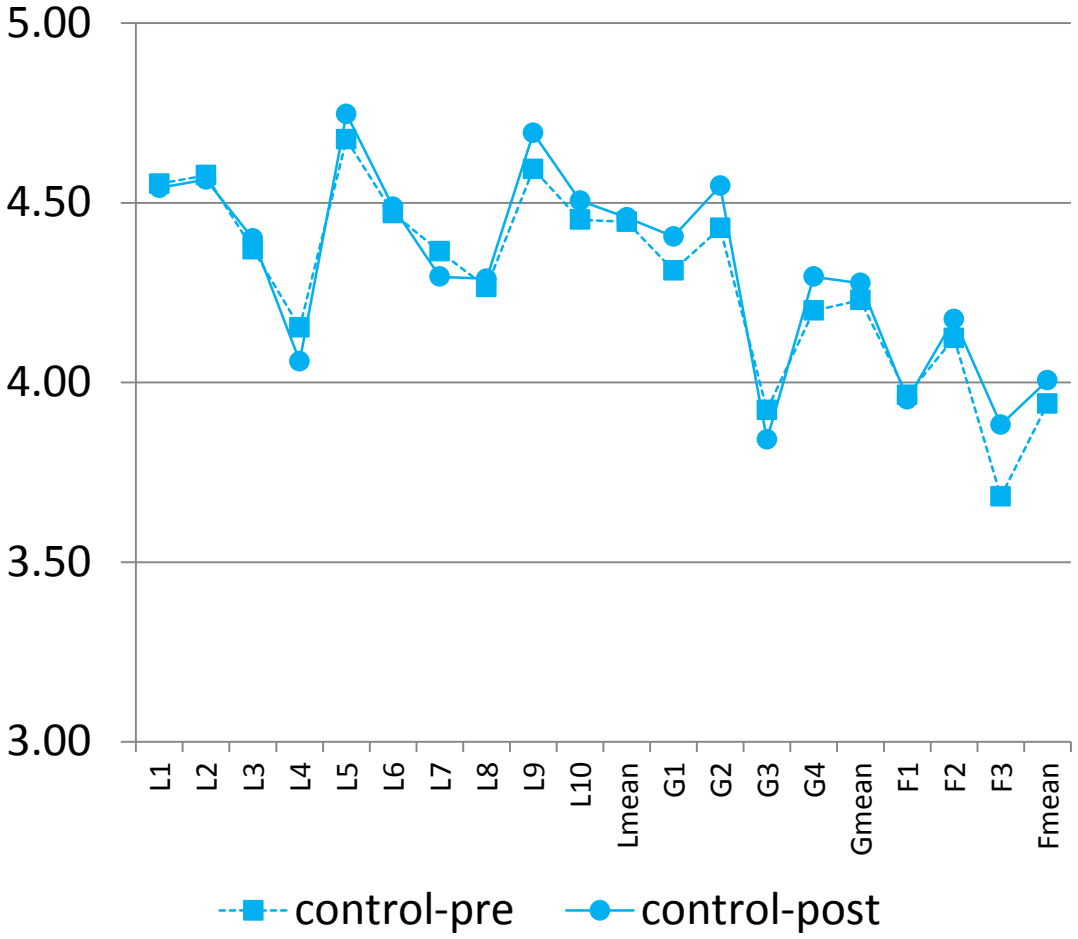

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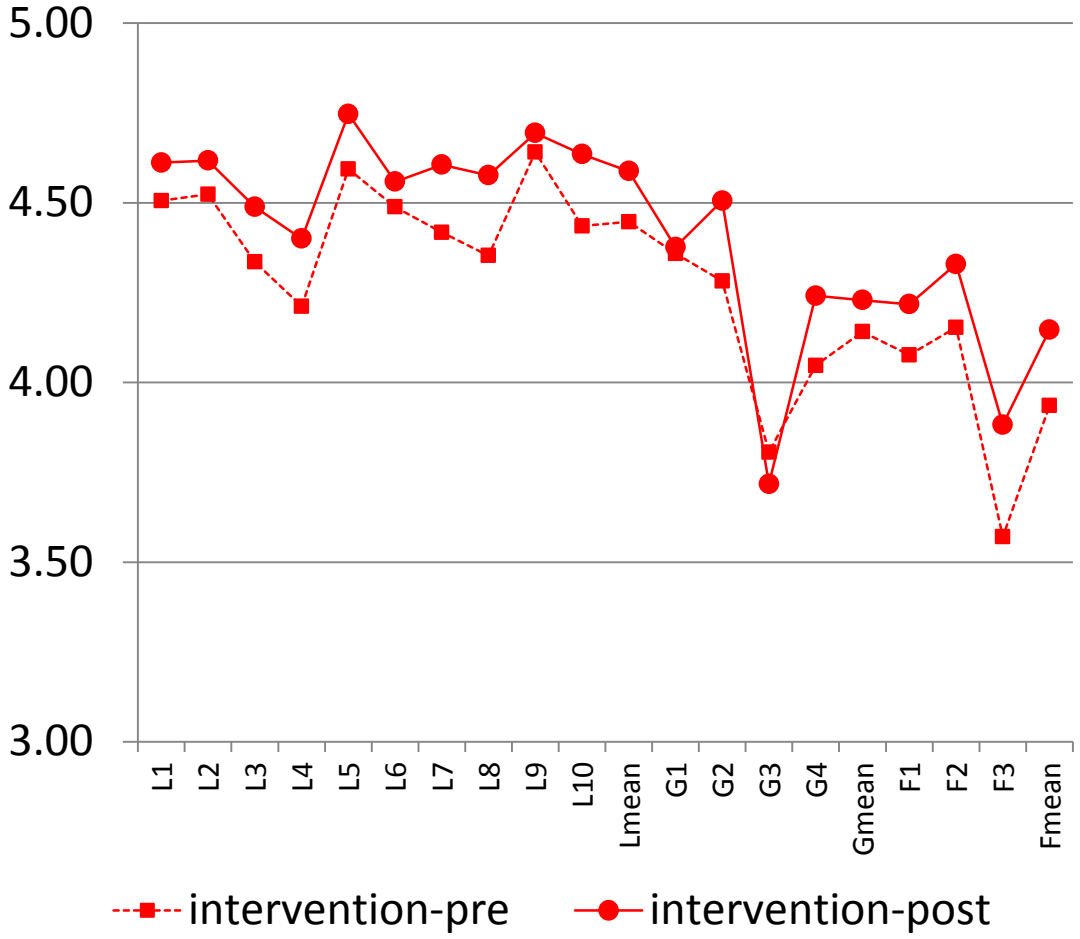

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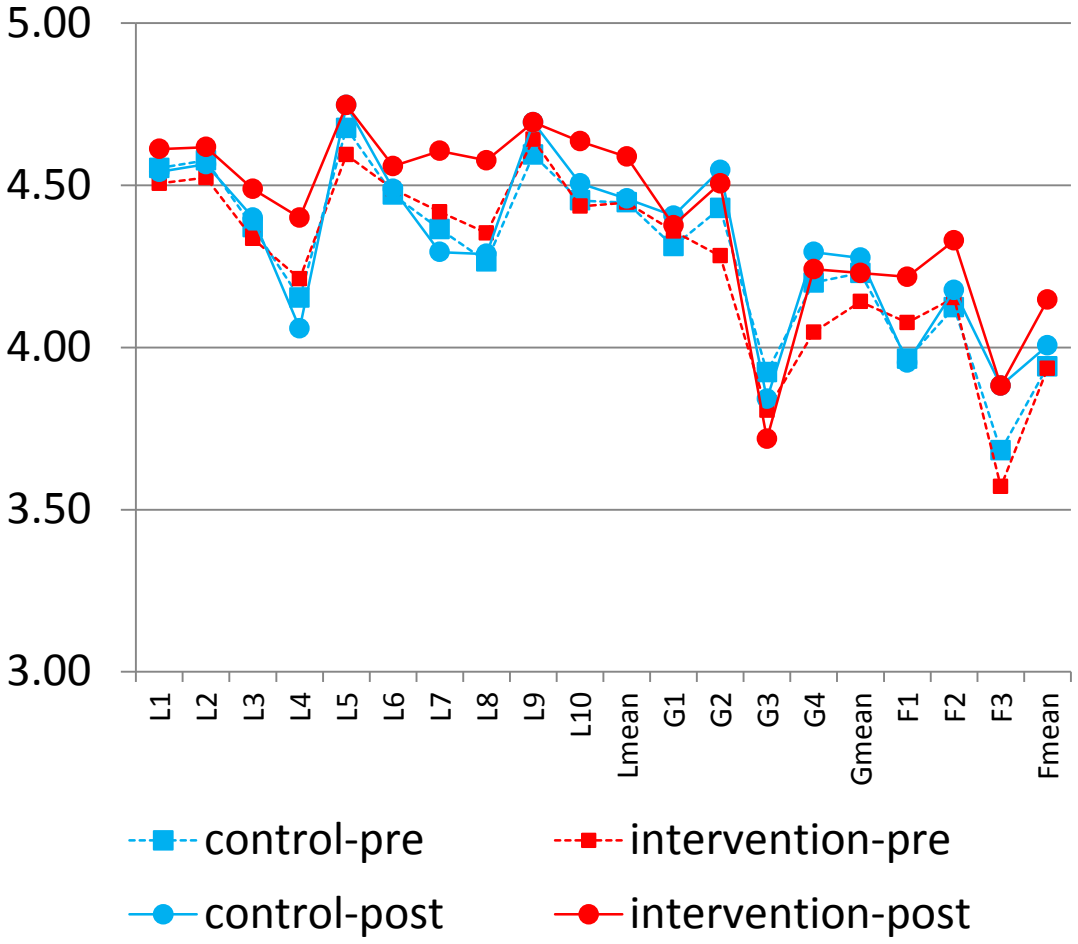

		Learning (L)	Group (G)	Feedback (F)
control	pre	4.45 ± 0.35	4.23 ± 0.39	3.94 ± 0.44
	post	4.46 ± 0.27	4.27 ± 0.36	4.00 ± 0.49
intervention	pre	4.45 ± 0.46	4.14 ± 0.42	3.94 ± 0.54
	post	4.59 ± 0.27	4.21 ± 0.28	4.15 ± 0.43
post vs pre*	control	*0.925*	*0.649*	*0.619*
	intervention	*0.093*	*0.523*	*0.072*

** Wilcoxon signed ranks test*

Power~ 0.40 > desired sample: ~30

What was most useful for your training?

1. Looking oneself in action (50%)

2. Getting peer feedback (33%)

3. Using the instrument as a reminder of tutor role (17%)

Summary

1. The instrument is a useful reminder of the tutor role and helps to self-reflect on personal teaching strategies

2. « Looking oneself in action » seems necessary to become aware of personal teaching strategies but does not modify self-monitoring of teaching skills

3. « Peer feedback » provides tutors with cues to perfect their teaching skills, and improves their perception. Students seem to confirm this improvement.

Limitations

- Pilot study has to be extended to a larger number of tutors
- Improvement of teaching skills need to be confirmed by peer-observers

Interpretation and conclusion

- Preliminary results are encouraging
- « looking oneself in action » is an important step for self-reflection and awareness
- Self-reflection needs peer feedback to become operative and elicit changes in teaching strategies
- Peer feedback combined to self-reflection is a promising approach to improve tutor teaching skills