Contribution of instructional activities to learning in a blended problem-based learning (PBL) context

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Background
PBL may be complemented by additional instructional activities, but their roles in learning are less documented. In this study, we aimed to analyze the contributions of PBL tutorials and complementary instructional activities to learning.

Summary of work
Methods: Data derived from 412 systematic evaluations of nine preclinical instructional units (PIUs) during two academic years. A 26-item evaluation questionnaire assessed several aspects of learning in each PIU (5-point Likert scale). Multivariate regression models analyzed the contribution of four different predictors (tutorials, lectures/seminars, practice labs and clinical skills) to students' perception of learning a great deal during each PIU (outcome).

Summary of results
Overall rating scores were >3.5 and relatively stable across PIUs. PBL tutorials were the main determinant of learning (r^2=0.45 to 0.19; $p<0.001$ across PIUs). Sensitivity analysis excluding tutorials confirmed that complementary instructional activities were less relevant predictors of learning (r^2=0.051 to 0.031, respectively for lectures/seminars and practice labs).

Conclusions
Findings from this study ensure that tutorials remain the dominant component of learning in a blended PBL preclinical program. The contribution of complementary instructional activities will be discussed in the context of a PBL curriculum.

Take home message
Tutorials are endorsed as the main contributor to learning in a blended PBL context.