

Supplementary Material – Additional Results from Learners’ Survey

This supplementary material contains a graphical and tabular summary of Likert scale questions from the learners’ survey. Specifically, it includes the following four types of outputs:

- **Supplementary Tables S1-S6** dedicated to the detailed summary of all Likert scale questions from the learners’ survey.
- **Supplementary Figures S1-S5** dedicated to the visualization of learners’ satisfaction (in percentages) with PBL and TBL activities based on Likert scale questions from the learners’ survey (apart from the 3 key questions visualized as Figure 1 in the article).
- **Supplementary Figure S6** dedicated to the visualization of the summary of all Likert scale questions in the four trials using box plots.
- **Supplementary Table S7** dedicated to the summary of overall satisfaction with TBL and PBL activities performed in the trials.

Suppl. Table S1. Learners' satisfaction with PBL and TBL activities performed in the trials – questions 7-5, 7-4, 7-2.

7-5) The PBL/TBL session helped to develop my problem solving skills.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26	3.8%	3.8%	15.4%	42.3%	30.8%	3.8%	0.304	0.96 ± 1.02	1 (-2; 2)
MUNI TBL 1	25			8.0%	48.0%	44.0%			1.36 ± 0.64	1 (0; 2)
MUNI TBL 2	22			27.3%	54.5%	18.2%			0.91 ± 0.68	1 (0; 2)
SGUL Oct PBL	65		1.5%	1.5%	36.9%	60.0%		<0.001	1.55 ± 0.61	2 (-1; 2)
SGUL Oct TBL	62	9.7%	32.3%	19.4%	29.0%	9.7%			-0.03 ± 1.19	0 (-2; 2)
SGUL Feb PBL	65	1.5%	1.5%	3.1%	50.8%	43.1%		<0.001	1.32 ± 0.75	1 (-2; 2)
SGUL Feb TBL	66	7.6%	39.4%	24.2%	24.2%	4.5%			-0.21 ± 1.05	0 (-2; 2)
UMF Iași PBL	21		4.8%		23.8%	71.4%		0.252	1.62 ± 0.74	2 (-1; 2)
UMF Iași TBL	47		2.1%		42.6%	55.3%			1.51 ± 0.62	2 (-1; 2)
7-4) The PBL/TBL session encouraged me to learn independently.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26			26.9%	50.0%	23.1%		0.992	0.96 ± 0.72	1 (0; 2)
MUNI TBL 1	25		4.0%	24.0%	44.0%	28.0%			0.96 ± 0.84	1 (-1; 2)
MUNI TBL 2	22			22.7%	50.0%	27.3%			1.05 ± 0.72	1 (0; 2)
SGUL Oct PBL	65			4.6%	36.9%	58.5%		<0.001	1.54 ± 0.59	2 (0; 2)
SGUL Oct TBL	62	6.5%	32.3%	16.1%	30.6%	14.5%			0.15 ± 1.21	0 (-2; 2)
SGUL Feb PBL	65	1.5%	3.1%	13.8%	40.0%	41.5%		<0.001	1.17 ± 0.89	1 (-2; 2)
SGUL Feb TBL	66	12.1%	25.8%	24.2%	28.8%	9.1%			-0.03 ± 1.19	0 (-2; 2)
UMF Iași PBL	21	4.8%	14.3%		19.0%	61.9%		0.030	1.19 ± 1.29	2 (-2; 2)
UMF Iași TBL	47	2.1%	6.4%		53.2%	34.0%	4.3%		1.16 ± 0.90	1 (-2; 2)
7-2) The PBL/TBL activity was engaging.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		3.8%	11.5%	61.5%	23.1%		0.043	1.04 ± 0.72	1 (-1; 2)
MUNI TBL 1	25			4.0%	36.0%	60.0%			1.56 ± 0.58	2 (0; 2)
MUNI TBL 2	22		4.5%	4.5%	68.2%	22.7%			1.09 ± 0.68	1 (-1; 2)
SGUL Oct PBL	65				36.9%	63.1%		<0.001	1.63 ± 0.49	2 (1; 2)
SGUL Oct TBL	62	12.9%	32.3%	11.3%	33.9%	9.7%			-0.05 ± 1.26	0 (-2; 2)
SGUL Feb PBL	65	3.1%		1.5%	50.8%	44.6%		<0.001	1.34 ± 0.80	1 (-2; 2)
SGUL Feb TBL	66	9.1%	25.8%	18.2%	34.8%	12.1%			0.15 ± 1.21	0 (-2; 2)
UMF Iași PBL	21				23.8%	76.2%		0.178	1.76 ± 0.44	2 (1; 2)
UMF Iași TBL	47				42.6%	57.4%			1.57 ± 0.50	2 (1; 2)

Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, Neutral – Neither agree nor disagree, N/A – not applicable, PBL – problem-based learning, SD – standard deviation, p – p-value calculated using Fisher's exact test, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.

Suppl. Table S2. Learners' satisfaction with PBL and TBL activities performed in the trials – questions 7-1, 7-6, 7-7.

7-1) The PBL/TBL activity provoked high quality discussion in the group.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		7.7%	11.5%	53.8%	26.9%		0.003	1.00 ± 0.85	1 (-1; 2)
MUNI TBL 1	25			4.0%	24.0%	72.0%			1.68 ± 0.56	2 (0; 2)
MUNI TBL 2	22			13.6%	63.6%	22.7%			1.09 ± 0.61	1 (0; 2)
SGUL Oct PBL	65			4.6%	36.9%	58.5%		<0.001	1.54 ± 0.59	2 (0; 2)
SGUL Oct TBL	62	3.2%	51.6%	6.5%	29.0%	9.7%			-0.10 ± 1.16	-1 (-2; 2)
SGUL Feb PBL	65	3.1%			47.7%	49.2%		<0.001	1.40 ± 0.79	1 (-2; 2)
SGUL Feb TBL	66	9.1%	21.2%	16.7%	40.9%	12.1%			0.26 ± 1.19	1 (-2; 2)
UMF Iași PBL	21				47.6%	52.4%		1.000	1.52 ± 0.51	2 (1; 2)
UMF Iași TBL	47				44.7%	53.2%	2.1%		1.54 ± 0.50	2 (1; 2)
7-6) The PBL/TBL session allowed me to work as part of a team.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26			3.8%	38.5%	46.2%	11.5%	0.125	1.48 ± 0.59	2 (0; 2)
MUNI TBL 1	25			4.0%	28.0%	68.0%			1.64 ± 0.57	2 (0; 2)
MUNI TBL 2	22				54.5%	45.5%			1.45 ± 0.51	1 (1; 2)
SGUL Oct PBL	65			4.6%	32.3%	63.1%		<0.001	1.58 ± 0.58	2 (0; 2)
SGUL Oct TBL	62	4.8%	22.6%	21.0%	38.7%	12.9%			0.32 ± 1.11	1 (-2; 2)
SGUL Feb PBL	65	1.5%		1.5%	40.0%	56.9%		<0.001	1.51 ± 0.69	2 (-2; 2)
SGUL Feb TBL	66	4.5%	4.5%	9.1%	59.1%	22.7%			0.91 ± 0.96	1 (-2; 2)
UMF Iași PBL	21				28.6%	71.4%		0.738	1.71 ± 0.46	2 (1; 2)
UMF Iași TBL	47		2.1%		34.0%	59.6%	4.3%		1.58 ± 0.62	2 (-1; 2)
7-7) The PBL/TBL session gave me the opportunity to apply my existing knowledge.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		7.7%	3.8%	53.8%	34.6%		0.370	1.15 ± 0.83	1 (-1; 2)
MUNI TBL 1	25		4.0%		48.0%	48.0%			1.40 ± 0.71	1 (-1; 2)
MUNI TBL 2	22		4.5%	13.6%	59.1%	22.7%			1.00 ± 0.76	1 (-1; 2)
SGUL Oct PBL	65		1.5%	1.5%	33.8%	63.1%		<0.001	1.58 ± 0.61	2 (-1; 2)
SGUL Oct TBL	62	3.2%	16.1%	14.5%	51.6%	14.5%			0.58 ± 1.03	1 (-2; 2)
SGUL Feb PBL	65	1.5%		1.5%	46.2%	50.8%		<0.001	1.45 ± 0.69	2 (-2; 2)
SGUL Feb TBL	66	10.6%	24.2%	13.6%	40.9%	10.6%			0.17 ± 1.22	1 (-2; 2)
UMF Iași PBL	21		4.8%		23.8%	71.4%		0.506	1.62 ± 0.74	2 (-1; 2)
UMF Iași TBL	47		2.1%		34.0%	59.6%	4.3%		1.58 ± 0.62	2 (-1; 2)

Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, Neutral – Neither agree nor disagree, N/A – not applicable, PBL – problem-based learning, SD – standard deviation, p – p-value calculated using Fisher's exact test, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.

Suppl. Table S3. Learners' satisfaction with PBL and TBL activities performed in the trials – questions 7-3, 8-1, 8-2.

7-3) I was provided with all the resources I needed to get the most from the PBL/TBL session.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		7.7%	7.7%	53.8%	26.9%	3.8%	0.032	1.04 ± 0.84	1 (-1; 2)
MUNI TBL 1	25				36.0%	64.0%			1.64 ± 0.49	2 (1; 2)
MUNI TBL 2	22		9.1%	9.1%	59.1%	22.7%			0.95 ± 0.84	1 (-1; 2)
SGUL Oct PBL	65	3.1%	9.2%	12.3%	35.4%	38.5%	1.5%	0.004	0.98 ± 1.09	1 (-2; 2)
SGUL Oct TBL	62	9.7%	16.1%	11.3%	51.6%	11.3%			0.39 ± 1.18	1 (-2; 2)
SGUL Feb PBL	65	1.5%	6.2%	15.4%	40.0%	32.3%	4.6%	0.062	1.00 ± 0.96	1 (-2; 2)
SGUL Feb TBL	66	3.0%	16.7%	12.1%	50.0%	18.2%			0.64 ± 1.06	1 (-2; 2)
UMF Iași PBL	21				28.6%	71.4%		0.190	1.71 ± 0.46	2 (1; 2)
UMF Iași TBL	47				46.8%	53.2%			1.53 ± 0.50	2 (1; 2)
8-1) I felt I had to make the same decisions as a professional.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26	3.8%	3.8%	19.2%	61.5%	11.5%		0.189	0.73 ± 0.87	1 (-2; 2)
MUNI TBL 1	25			8.0%	48.0%	44.0%			1.36 ± 0.64	1 (0; 2)
MUNI TBL 2	22		4.5%	13.6%	54.5%	22.7%	4.5%		1.00 ± 0.77	1 (-1; 2)
SGUL Oct PBL	65		3.1%	7.7%	63.1%	26.2%		<0.001	1.12 ± 0.67	1 (-1; 2)
SGUL Oct TBL	62	3.2%	16.1%	25.8%	51.6%	1.6%	1.6%		0.33 ± 0.89	1 (-2; 2)
SGUL Feb PBL	65	1.5%		12.3%	61.5%	23.1%	1.5%	<0.001	1.06 ± 0.71	1 (-2; 2)
SGUL Feb TBL	66	16.7%	30.3%	33.3%	16.7%	3.0%			-0.41 ± 1.05	0 (-2; 2)
UMF Iași PBL	21	4.8%			52.4%	42.9%		0.126	1.29 ± 0.90	1 (-2; 2)
UMF Iași TBL	47			12.8%	40.4%	46.8%			1.34 ± 0.70	1 (0; 2)
8-2) I felt I were the professional solving a real-world problem.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		11.5%	38.5%	38.5%	7.7%	3.8%	0.010	0.44 ± 0.82	0 (-1; 2)
MUNI TBL 1	25			4.0%	64.0%	32.0%			1.28 ± 0.54	1 (0; 2)
MUNI TBL 2	22		4.5%	22.7%	54.5%	13.6%	4.5%		0.81 ± 0.75	1 (-1; 2)
SGUL Oct PBL	65		4.6%	23.1%	49.2%	21.5%	1.5%	<0.001	0.89 ± 0.80	1 (-1; 2)
SGUL Oct TBL	62	3.2%	21.0%	33.9%	38.7%	3.2%			0.18 ± 0.91	0 (-2; 2)
SGUL Feb PBL	65	1.5%	1.5%	23.1%	55.4%	16.9%	1.5%	<0.001	0.86 ± 0.77	1 (-2; 2)
SGUL Feb TBL	66	15.2%	30.3%	39.4%	12.1%	3.0%			-0.42 ± 0.99	0 (-2; 2)
UMF Iași PBL	21				57.1%	42.9%		0.147	1.43 ± 0.51	1 (1; 2)
UMF Iași TBL	47		2.1%	17.0%	53.2%	25.5%	2.1%		1.04 ± 0.73	1 (-1; 2)

Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, Neutral – Neither agree nor disagree, N/A – not applicable, PBL – problem-based learning, SD – standard deviation, p – p-value calculated using Fisher's exact test, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.

Suppl. Table S4. Learners' satisfaction with PBL and TBL activities performed in the trials – questions 8-3, 8-4, 8-5 (I was actively engaged in...).

8-3) ... gathering the information and data I needed to effectively solve the problem.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26			11.5%	46.2%	42.3%		0.439	1.31 ± 0.68	1 (0; 2)
MUNI TBL 1	25		4.0%	20.0%	48.0%	28.0%			1.00 ± 0.82	1 (-1; 2)
MUNI TBL 2	22			13.6%	63.6%	18.2%	4.5%		1.05 ± 0.59	1 (0; 2)
SGUL Oct PBL	65		3.1%	10.8%	53.8%	32.3%		<0.001	1.15 ± 0.73	1 (-1; 2)
SGUL Oct TBL	62	14.5%	25.8%	17.7%	40.3%	1.6%			-0.11 ± 1.15	0 (-2; 2)
SGUL Feb PBL	65	1.5%		9.2%	70.8%	16.9%	1.5%	<0.001	1.03 ± 0.64	1 (-2; 2)
SGUL Feb TBL	66	7.6%	31.8%	28.8%	30.3%	1.5%			-0.14 ± 0.99	0 (-2; 2)
UMF Iași PBL	21				28.6%	71.4%		0.644	1.71 ± 0.46	2 (1; 2)
UMF Iași TBL	47			6.4%	36.2%	55.3%	2.1%		1.50 ± 0.62	2 (0; 2)
8-4) ... revising my initial image of the problem as new information became available.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		3.8%	11.5%	53.8%	26.9%	3.8%	0.084	1.08 ± 0.76	1 (-1; 2)
MUNI TBL 1	25		4.0%	4.0%	36.0%	56.0%			1.44 ± 0.77	2 (-1; 2)
MUNI TBL 2	22			22.7%	54.5%	18.2%	4.5%		0.95 ± 0.67	1 (0; 2)
SGUL Oct PBL	65			4.6%	69.2%	24.6%	1.5%	<0.001	1.20 ± 0.51	1 (0; 2)
SGUL Oct TBL	62	12.9%	17.7%	27.4%	40.3%	1.6%			0.00 ± 1.09	0 (-2; 2)
SGUL Feb PBL	65	1.5%	1.5%	12.3%	66.2%	15.4%	3.1%	<0.001	0.95 ± 0.71	1 (-2; 2)
SGUL Feb TBL	66	9.1%	27.3%	31.8%	30.3%	1.5%			-0.12 ± 1.00	0 (-2; 2)
UMF Iași PBL	21				33.3%	66.7%		0.632	1.67 ± 0.48	2 (1; 2)
UMF Iași TBL	47			6.4%	36.2%	53.2%	4.3%		1.49 ± 0.63	2 (0; 2)
8-5) ... thinking about which findings supported or refuted each step in my plan.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		3.8%	19.2%	46.2%	30.8%		0.584	1.04 ± 0.82	1 (-1; 2)
MUNI TBL 1	25			8.0%	60.0%	32.0%			1.24 ± 0.60	1 (0; 2)
MUNI TBL 2	22			13.6%	63.6%	18.2%	4.5%		1.05 ± 0.59	1 (0; 2)
SGUL Oct PBL	65			9.2%	53.8%	36.9%		<0.001	1.28 ± 0.63	1 (0; 2)
SGUL Oct TBL	62	9.7%	16.1%	14.5%	56.5%	3.2%			0.27 ± 1.09	1 (-2; 2)
SGUL Feb PBL	65	1.5%		6.2%	61.5%	27.7%	3.1%	<0.001	1.17 ± 0.68	1 (-2; 2)
SGUL Feb TBL	66	6.1%	21.2%	33.3%	37.9%	1.5%			0.08 ± 0.95	0 (-2; 2)
UMF Iași PBL	21				42.9%	57.1%		0.693	1.57 ± 0.51	2 (1; 2)
UMF Iași TBL	47			4.3%	31.9%	59.6%	4.3%		1.58 ± 0.58	2 (0; 2)

Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, Neutral – Neither agree nor disagree, N/A – not applicable, PBL – problem-based learning, SD – standard deviation, p – p-value calculated using Fisher's exact test, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.

Suppl. Table S5. Learners' satisfaction with PBL and TBL activities performed in the trials – questions 8-6, 8-7, 8-8.

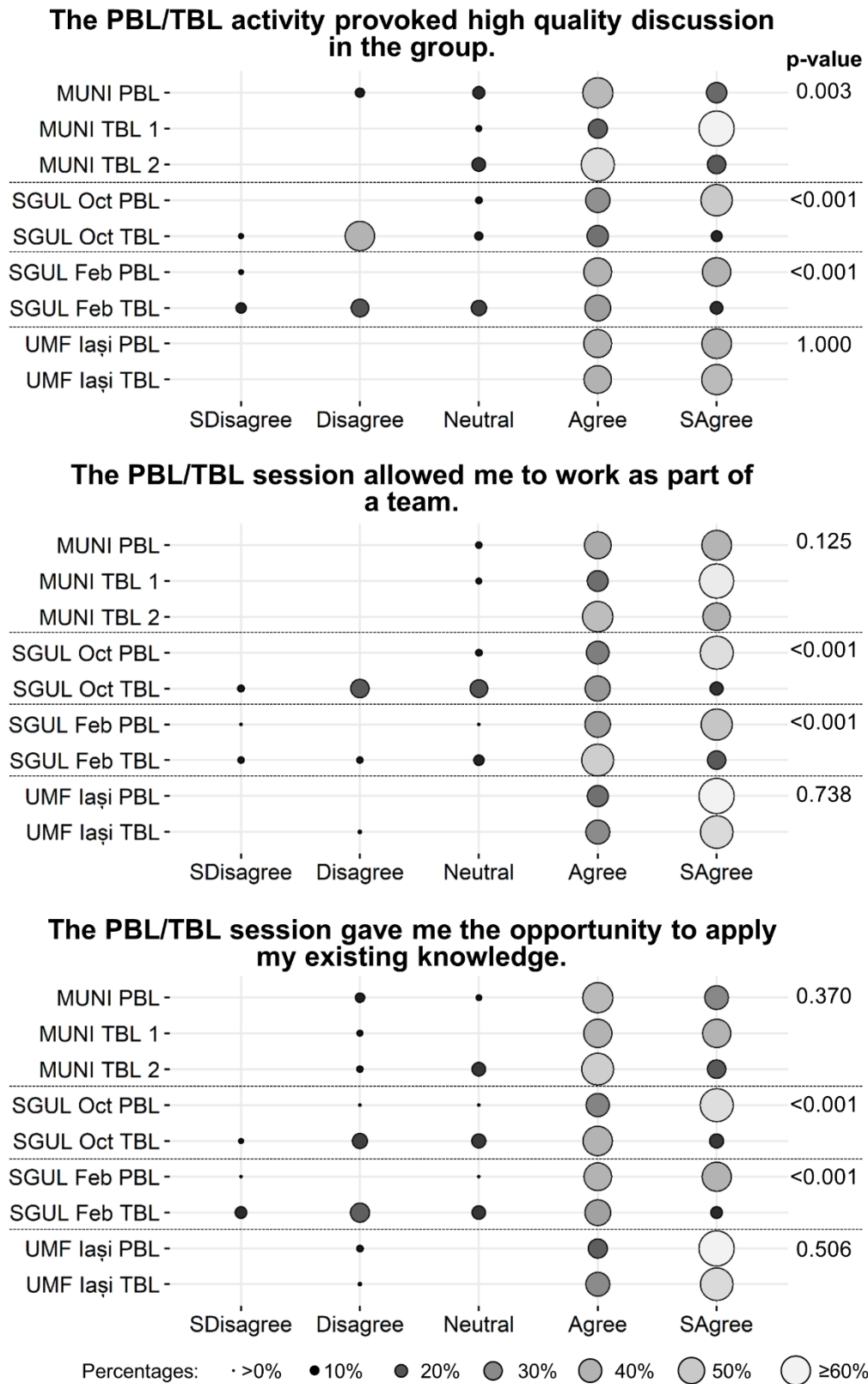
8-6) I felt that the case was at the appropriate level of difficulty for my level of training.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		7.7%	15.4%	53.8%	23.1%		0.396	0.92 ± 0.84	1 (-1; 2)
MUNI TBL 1	25		4.0%	4.0%	56.0%	32.0%	4.0%		1.21 ± 0.72	1 (-1; 2)
MUNI TBL 2	22		13.6%	22.7%	31.8%	27.3%	4.5%		0.76 ± 1.04	1 (-1; 2)
SGUL Oct PBL	65	1.5%	10.8%	13.8%	46.2%	27.7%		0.001	0.88 ± 0.99	1 (-2; 2)
SGUL Oct TBL	62	12.9%	25.8%	19.4%	33.9%	8.1%			-0.02 ± 1.21	0 (-2; 2)
SGUL Feb PBL	65	1.5%	1.5%	4.6%	61.5%	27.7%	3.1%	<0.001	1.16 ± 0.72	1 (-2; 2)
SGUL Feb TBL	66	7.6%	18.2%	25.8%	47.0%	1.5%			0.17 ± 1.00	0 (-2; 2)
UMF Iași PBL	21				42.9%	57.1%		1.000	1.57 ± 0.51	2 (1; 2)
UMF Iași TBL	47			4.3%	38.3%	53.2%	4.3%		1.51 ± 0.59	2 (0; 2)
8-7) The questions were helpful in enhancing my reasoning.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		7.7%	15.4%	50.0%	23.1%	3.8%	0.307	0.92 ± 0.86	1 (-1; 2)
MUNI TBL 1	25			16.0%	32.0%	52.0%			1.36 ± 0.76	2 (0; 2)
MUNI TBL 2	22		9.1%	13.6%	50.0%	22.7%	4.5%		0.90 ± 0.89	1 (-1; 2)
SGUL Oct PBL	65		1.5%	6.2%	60.0%	32.3%		<0.001	1.23 ± 0.63	1 (-1; 2)
SGUL Oct TBL	62	6.5%	21.0%	24.2%	40.3%	8.1%			0.23 ± 1.08	0 (-2; 2)
SGUL Feb PBL	65	1.5%		9.2%	64.6%	21.5%	3.1%	<0.001	1.08 ± 0.68	1 (-2; 2)
SGUL Feb TBL	66	4.5%	21.2%	24.2%	43.9%	6.1%			0.26 ± 1.01	1 (-2; 2)
UMF Iași PBL	21				28.6%	71.4%		0.509	1.71 ± 0.46	2 (1; 2)
UMF Iași TBL	47				42.6%	55.3%	2.1%		1.57 ± 0.50	2 (1; 2)
8-8) After completing this case, I feel better prepared to suggest optimal solution of any problem of this type.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		3.8%	11.5%	69.2%	15.4%		0.004	0.96 ± 0.66	1 (-1; 2)
MUNI TBL 1	25			4.0%	44.0%	52.0%			1.48 ± 0.59	2 (0; 2)
MUNI TBL 2	22			31.8%	50.0%	13.6%	4.5%		0.81 ± 0.68	1 (0; 2)
SGUL Oct PBL	65		4.6%	16.9%	56.9%	20.0%	1.5%	<0.001	0.94 ± 0.75	1 (-1; 2)
SGUL Oct TBL	62	16.1%	32.3%	21.0%	30.6%				-0.34 ± 1.09	0 (-2; 1)
SGUL Feb PBL	65	1.5%	1.5%	23.1%	56.9%	13.8%	3.1%	<0.001	0.83 ± 0.75	1 (-2; 2)
SGUL Feb TBL	66	10.6%	37.9%	22.7%	27.3%	1.5%			-0.29 ± 1.03	0 (-2; 2)
UMF Iași PBL	21				33.3%	66.7%		0.344	1.67 ± 0.48	2 (1; 2)
UMF Iași TBL	47			4.3%	46.8%	44.7%	4.3%		1.42 ± 0.58	1 (0; 2)

Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, Neutral – Neither agree nor disagree, N/A – not applicable, PBL – problem-based learning, SD – standard deviation, p – p-value calculated using Fisher's exact test, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.

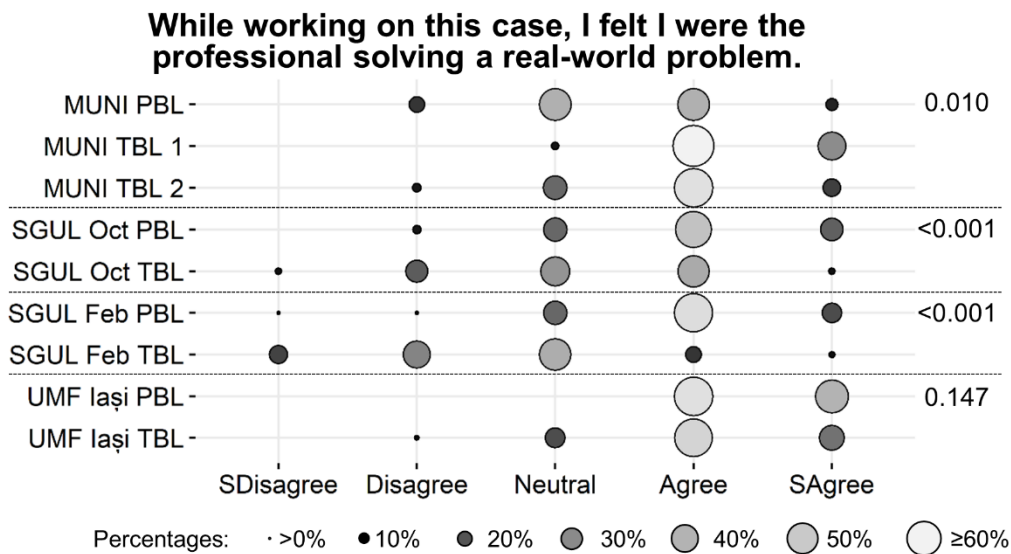
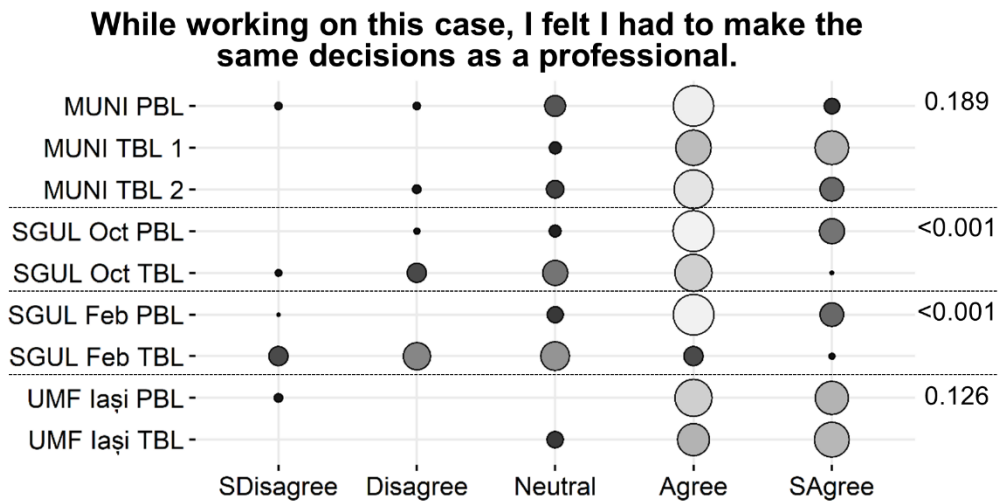
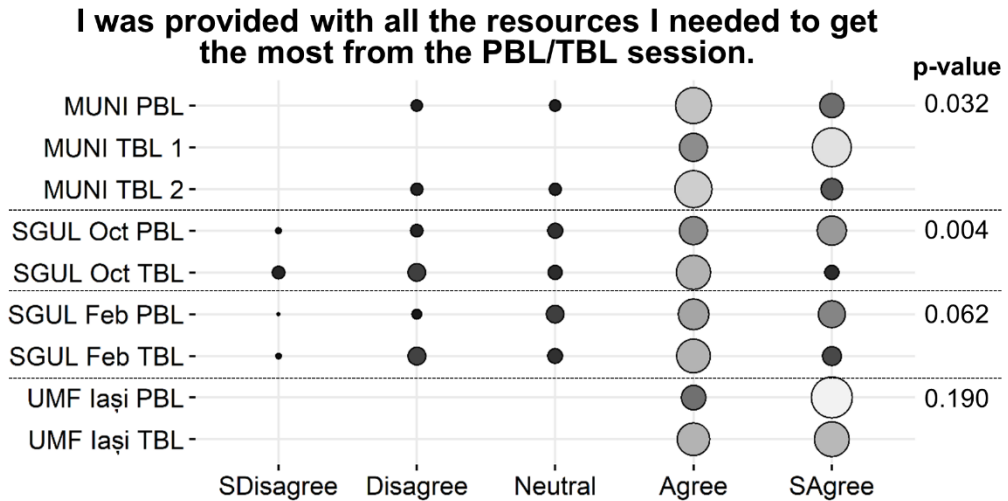
Suppl. Table S6. Learners' satisfaction with PBL and TBL activities performed in the trials – questions 8-9, 8-10.

8-9) After completing this case, I feel better prepared to solve similar real-world problems.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		15.4%	15.4%	53.8%	15.4%		0.109	0.69 ± 0.93	1 (-1; 2)
MUNI TBL 1	25		4.0%	4.0%	44.0%	48.0%			1.36 ± 0.76	1 (-1; 2)
MUNI TBL 2	22		4.5%	13.6%	59.1%	18.2%	4.5%		0.95 ± 0.74	1 (-1; 2)
SGUL Oct PBL	65		3.1%	21.5%	60.0%	13.8%	1.5%	<0.001	0.86 ± 0.69	1 (-1; 2)
SGUL Oct TBL	62	11.3%	37.1%	24.2%	24.2%		3.2%		-0.37 ± 0.99	-1 (-2; 1)
SGUL Feb PBL	65	1.5%	1.5%	29.2%	60.0%	7.7%		<0.001	0.71 ± 0.70	1 (-2; 2)
SGUL Feb TBL	66	9.1%	28.8%	36.4%	24.2%		1.5%		-0.23 ± 0.93	0 (-2; 1)
UMF Iași PBL	21				42.9%	57.1%		0.618	1.57 ± 0.51	2 (1; 2)
UMF Iași TBL	47			8.5%	44.7%	44.7%	2.1%		1.37 ± 0.64	1 (0; 2)
8-10) Overall, working through this case was a worthwhile learning experience.										
	N	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	N/A	p	Mean ± SD	Median (Min; Max)
MUNI PBL	26		3.8%	11.5%	42.3%	38.5%	3.8%	0.130	1.20 ± 0.82	1 (-1; 2)
MUNI TBL 1	25				40.0%	60.0%			1.60 ± 0.50	2 (1; 2)
MUNI TBL 2	22			4.5%	63.6%	27.3%	4.5%		1.24 ± 0.54	1 (0; 2)
SGUL Oct PBL	65		3.1%	1.5%	41.5%	52.3%	1.5%	<0.001	1.45 ± 0.69	2 (-1; 2)
SGUL Oct TBL	62	24.2%	25.8%	21.0%	21.0%	4.8%	3.2%		-0.45 ± 1.23	-1 (-2; 2)
SGUL Feb PBL	65	1.5%		10.8%	63.1%	24.6%		<0.001	1.09 ± 0.70	1 (-2; 2)
SGUL Feb TBL	66	13.6%	33.3%	21.2%	28.8%	1.5%	1.5%		-0.29 ± 1.09	0 (-2; 2)
UMF Iași PBL	21				23.8%	76.2%		0.284	1.76 ± 0.44	2 (1; 2)
UMF Iași TBL	47			4.3%	36.2%	53.2%	6.4%		1.52 ± 0.59	2 (0; 2)

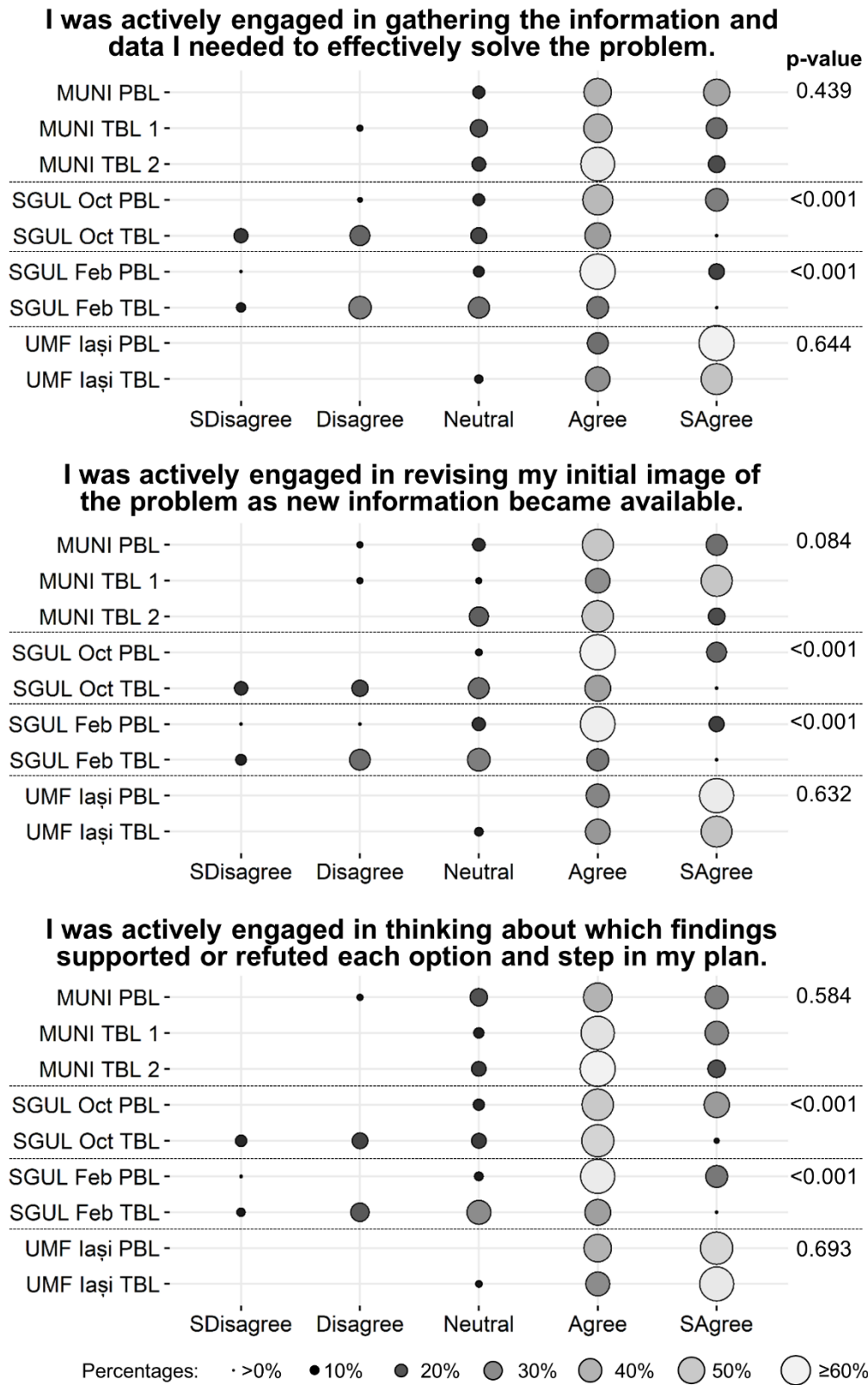
Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, Neutral – Neither agree nor disagree, N/A – not applicable, PBL – problem-based learning, SD – standard deviation, p – p-value calculated using Fisher's exact test, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.



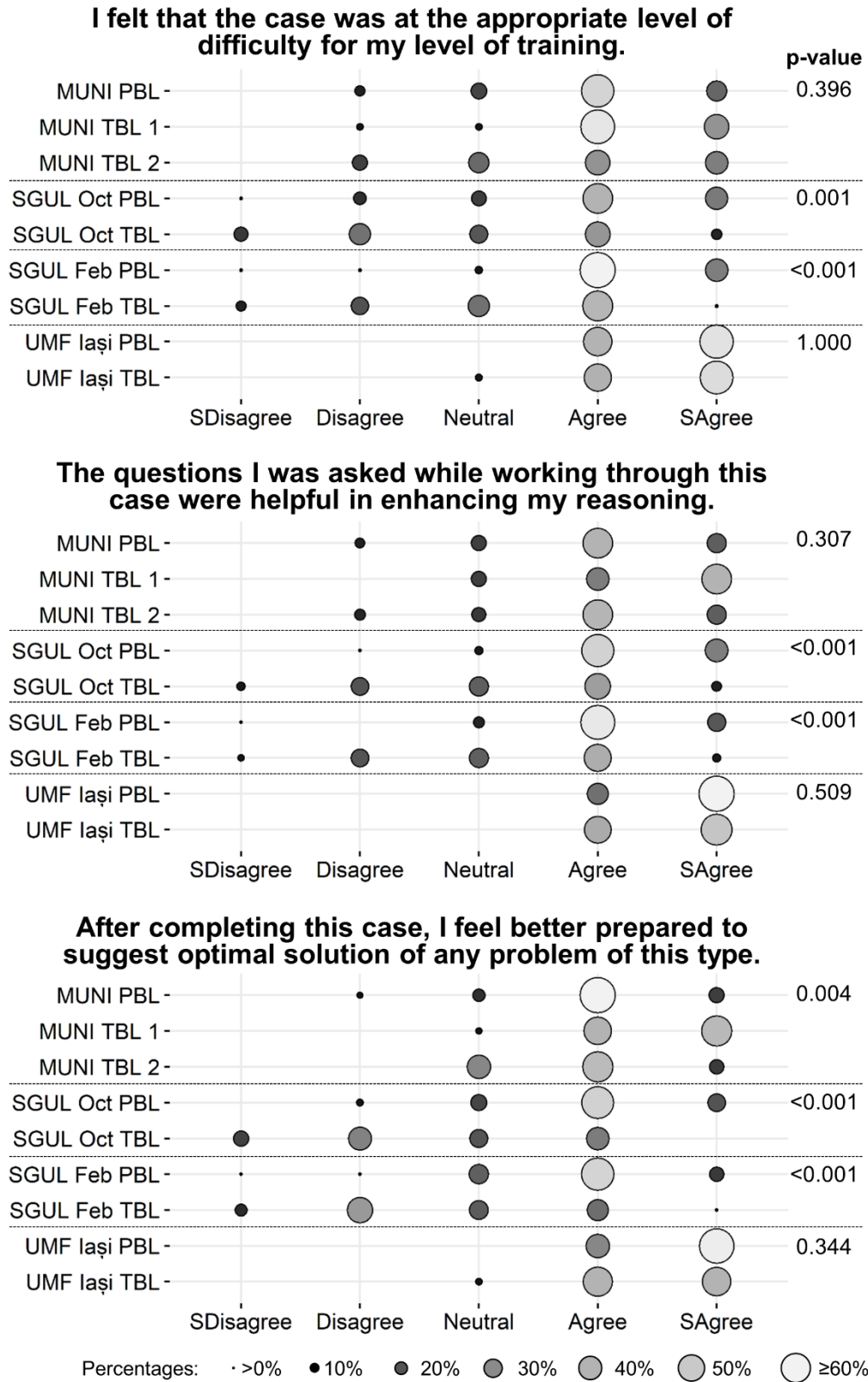
Suppl. Fig. S1. Learners' satisfaction with PBL and TBL activities – questions 7-1, 7-6, 7-7.



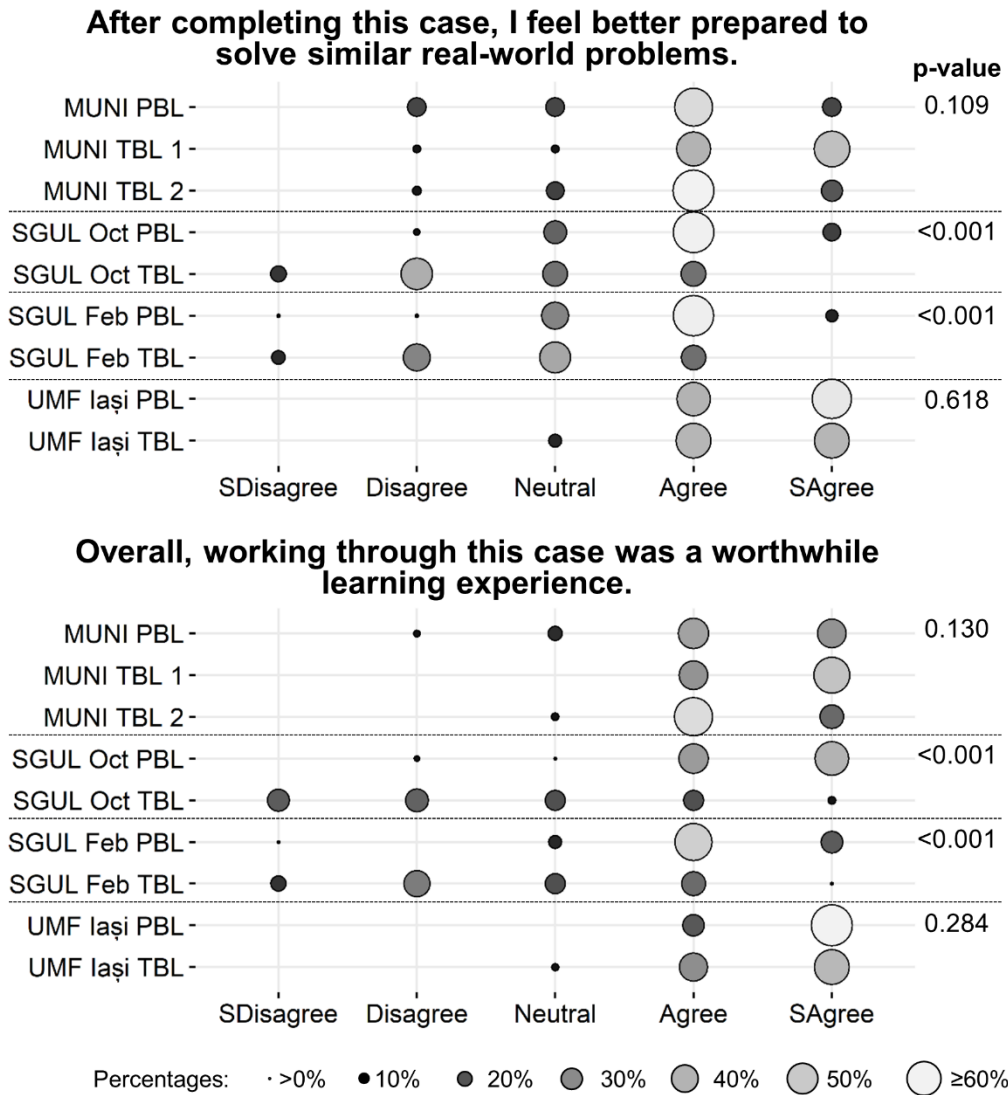
Suppl. Fig. S2. Learners' satisfaction with PBL and TBL activities – questions 7-3, 8-1, 8-2.



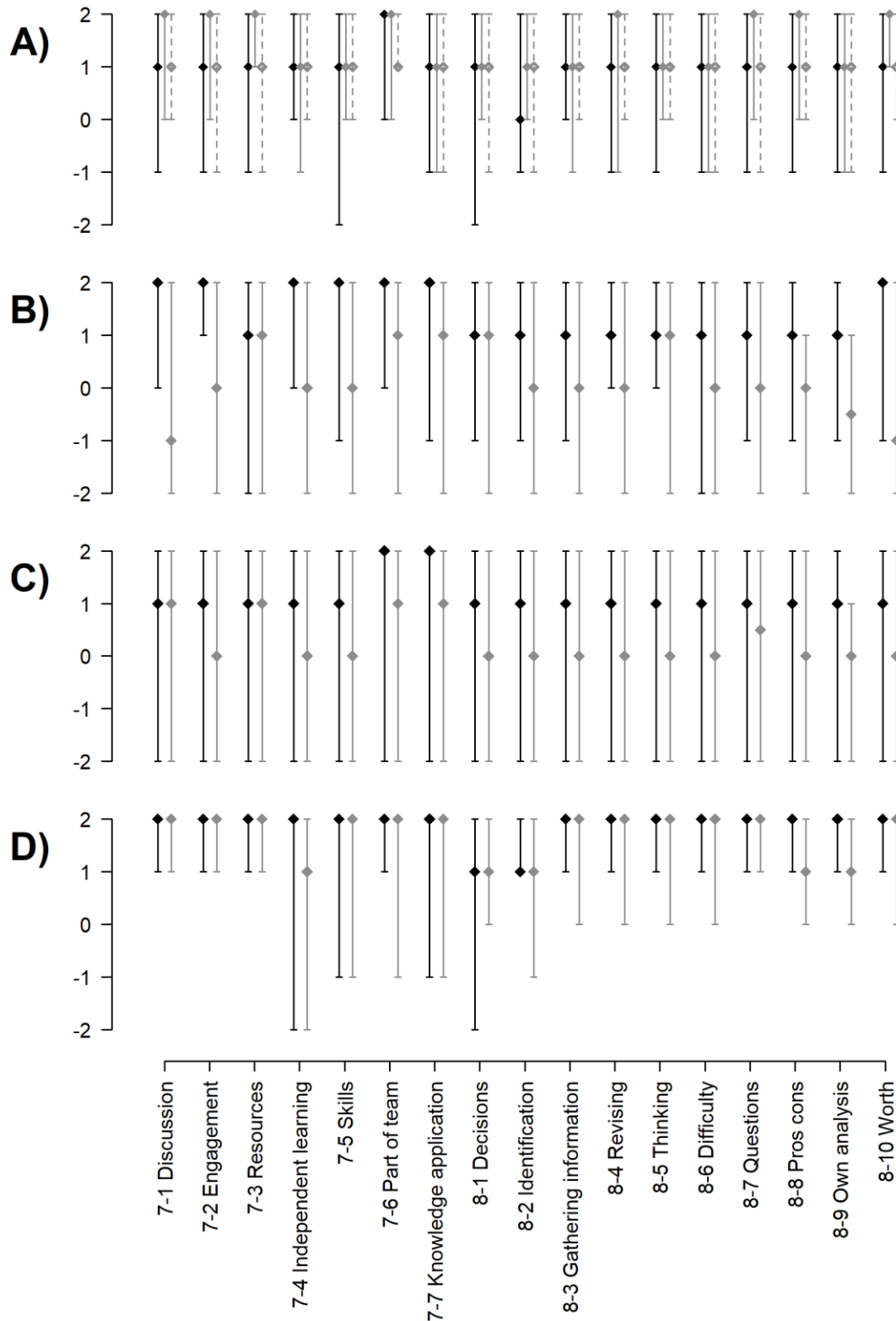
Suppl. Fig. S3. Learners' satisfaction with PBL and TBL activities – questions 8-3, 8-4, 8-5.



Suppl. Fig. S4. Learners' satisfaction with PBL and TBL activities – questions 8-6, 8-7, 8-8.



Suppl. Fig. S5. Learners' satisfaction with PBL and TBL activities – questions 8-9, 8-10.



Suppl. Fig. S6. Summary of all Likert scale questions showing comparison of PBL (in black) and TBL (in grey) in the four trials designated as: (A) MUNI; (B) SGUL Oct; (C) SGUL Feb; (D) UMF Iași. The diamond represents median and the whiskers depict minimum and maximum. In the MUNI trial, TBL 2 results are visualized using grey dashed lines and empty diamonds.

The abbreviations stands for:

- 7-1 Discussion: The PBL/TBL activity provoked high quality discussion in the group;
 7-2 Engagement: The PBL/TBL activity was engaging;
 7-3 Resources: I was provided with all the resources I needed to get the most from the PBL/TBL session;
 7-4 Independent learning: The PBL/TBL activity encouraged me to learn independently;
 7-5 Skills: The PBL/TBL activity helped to develop my problem solving skills;
 7-6 Part of team: The PBL/TBL activity allowed me to work as part of a team;
 7-7 Knowledge application: The PBL/TBL activity gave me the opportunity to apply my existing knowledge;
 8-1 Decisions: While working on this virtual scenario, I felt I had to make the same decisions a professional would make in real life;
 8-2 Identification: While working through this virtual scenario, I felt I were the professional solving a real-world problem;
 8-3 Gathering information: While working through this virtual scenario, I was actively engaged in gathering the information and data I needed to effectively solve the problem;
 8-4 Revising: While working through this virtual scenario, I was actively engaged in revising my initial image of the real-world problem as new information became available;
 8-5 Thinking: While working through this virtual scenario, I was actively engaged in thinking about which findings supported or refuted each option and/or step in my plan;
 8-6 Difficulty: I felt that the virtual scenario was at the appropriate level of difficulty for my level of training;
 8-7 Questions: The questions I was asked while working through this virtual scenario were helpful in enhancing my reasoning in this case;
 8-8 Pros cons: After completing this virtual scenario, I feel better prepared to suggest the optimal solution of any problem of this type;
 8-9 Own analysis: After completing this virtual scenario I feel better prepared to solve similar real-world problems;
 8-10 Worth: Overall, working through this virtual scenario was a worthwhile learning experience.

Suppl. Table S7. Overall learners' satisfaction with TBL and PBL activities performed in the trials.

Institution	Session	N	Mean \pm SD	Median (min-max)	p	p cor.
MUNI	PBL	22	1.05 \pm 0.52	1.00 (-0.14-2.00)	0.073	0.219
	TBL	47	1.28 \pm 0.48	1.29 (0.29-2.00)		
SGUL	PBL	126	1.40 \pm 0.56	1.43 (-2.00-2.00)	<0.001	<0.001
	TBL	128	0.23 \pm 0.86	0.14 (-2.00-2.00)		
UMF Iași	PBL	21	1.59 \pm 0.51	1.71 (0.14-2.00)	0.565	1.000
	TBL	42	1.52 \pm 0.47	1.57 (0.00-2.00)		

Min – minimum, Max – maximum, MUNI – Masaryk University, N – number of responses, p – p-value calculated using two-sample t-test; p cor. – p-value corrected for multiple comparisons; PBL – problem-based learning, SD – standard deviation, SGUL – St George's University of London, TBL – team-based learning; UMF – Grigore T. Popa University of Medicine and Pharmacy.