

Table 1a

Means and standard deviations of first-year students' performance, mental effort, and time on task (entire sample).

	Worked examples + process steps $n = 19$		Worked examples - no process steps $n = 19$		Problem-solving + process steps $n = 19$		Problem solving - no process steps $n = 18$	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Prior knowledge test (max. = 34)	9.39	2.28	8.19	3.25	9.00	3.31	8.76	2.5
Mental effort learning tasks (max. 9)	5.34	1.11	5.16	1.00	6.66	1.65	5.86	1.37
Time spent on learning tasks (s)	589.37	256.27	547.58	200.18	1560.26	622.57	831.58	337.64
Performance test task (max. 100)	59.58	31.42	57.68	24.34	9.53	6.42	11.00	7.54
Mental effort test task (max. 9)	5.68	1.16	6.05	1.62	6.05	1.87	5.72	1.18

Table 1b

Means and standard deviations of first-year students' performance, mental effort, and time on task (after outlier removal).

	Worked examples + process steps $n = 19$		Worked examples - no process steps $n = 19$		Problem-solving + process steps $n = 19$		Problem solving - no process steps $n = 18$	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mental effort learning tasks (max. 9)	5.50	0.89	5.41	0.69	6.92	1.24	5.86	1.37
Time spent on learning tasks (s)	589.37	256.26	547.58	200.18	1460.72	459.41	831.58	337.64
Performance test task (max. 100)	59.58	31.42	57.68	24.34	8.33	3.88	8.88	4.37
Mental effort test task (max. 9)	5.71	1.29	6.05	1.62	6.05	1.87	5.38	0.62

Table 2

Means and standard deviations of third-year students' performance, mental effort, and time on task.

	Worked examples + process steps $n = 19$		Worked examples - no process steps $n = 19$		Problem-solving + process steps $n = 19$		Problem solving - no process steps $n = 18$	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Prior knowledge test (max. = 34)	17.00	2.14	17.25	4.06	17.00	3.78	17.22	2.77
Mental effort learning tasks (max. 9)	4.22	1.03	3.94	1.13	4.44	2.34	5.22	1.15
Time spent on learning tasks (s)	443.83	187.39	410.89	142.09	1101.33	364.40	849.83	334.99
Performance test task (max. 100)	86.00	18.59	78.56	17.89	27.78	29.03	46.33	21.89
Mental effort test task (max. 9)	4.44	1.33	4.67	1.50	4.22	1.92	5.11	1.27