

The worked example and expertise reversal effect in less structured tasks: Learning to reason about legal cases

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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 |