

Senseo - Questionnaire

1. How did you feel about the time pressure?

| | | | | | |
|---|--|----------|----------------------------|------|----------|
| Time pressure was very high; impossible to cope with all tasks | | 5 | Arith. mean: | 2.80 | (n = 30) |
| Serious time pressure, but could cope with most tasks | | . | STD: | 0.42 | (n = 30) |
| Felt no time pressure | | . | Arith. mean Senseo group: | 2.67 | (n = 15) |
| Could have done slightly more task in the time provided | | . | Arith. mean control group: | 2.93 | (n = 15) |
| There was too much time, could have performed many more tasks in these 90 minutes | | 1 | | | |

Result:

2. Please rate the difficulty of the different tasks:

| | impossible (5) | difficult | average | simple | trivial (1) | Result: Arith. mean (n = 30) | STD (n = 30) | Arith. mean Senseo group (n = 15) | Arith. mean control group (n=15) |
|-----------------|----------------|-----------|---------|--------|-------------|--|--------------|-----------------------------------|----------------------------------|
| Task 1.1 | | | | | | 3.2 | 0.69 | 3.0 | 3.4 |
| Task 1.2 | | | | | | 2.8 | 0.41 | 2.7 | 2.9 |
| Task 2.1 | | | | | | 3.6 | 0.25 | 3.1 | 4.1 |
| Task 2.2 | | | | | | 2.4 | 0.31 | 2.5 | 2.3 |
| Task 3.1 | | | | | | 3.2 | 0.56 | 3.2 | 3.2 |
| Task 3.2 | | | | | | 3.5 | 0.41 | 3.1 | 3.9 |
| Task 4.1 | | | | | | 3.1 | 0.27 | 3.0 | 3.2 |
| Task 4.2 | | | | | | 3.2 | 0.19 | 2.9 | 3.5 |
| Task 5.1 | | | | | | 2.8 | 0.86 | 2.7 | 2.9 |
| Task 5.2 | | | | | | 2.9 | 0.72 | 2.9 | 2.9 |
| Overall: | | | | | | 3.07 | | 2.9 | 3.2 |

The following questions are only answered by subjects from the Senseo group.

4. Please specify for each task which dynamic information provided by Senseo you used.

| | Run-time types (Tooltip) | Number of invocations | Number of created objects | Number of exec. bytecodes | CCRC | Dyn. Collaborators |
|--------|--------------------------|-----------------------|---------------------------|---------------------------|------|--------------------|
| Task 1 | 33% | 53% | 33% | 27% | 7% | 53% |
| Task 2 | 47% | 67% | 47% | 33% | 7% | 80% |
| Task 3 | 47% | 40% | 27% | 20% | 0% | 73% |

| | | | | | | |
|--------|-----|-----|-----|-----|----|-----|
| Task 4 | 20% | 27% | 13% | 7% | 0% | 33% |
| Task 5 | 27% | 40% | 27% | 13% | 7% | 27% |

(Results in the table, n = 15)

5. How useful do you rate dynamic information resp. features provided by Senseo in a scale from 4 (very useful) to 0 (not useful at all)?

| Dynamic information / Senseo feature | very useful (4) | useful | some limited usefulness | barely useful | not useful (0) | Arith. Mean (n = 15): | STD (n = 15) |
|--|-----------------|--------|-------------------------|---------------|----------------|-----------------------|--------------|
| Tooltip showing run-time types | | | | | | 3.6 | 0.45 |
| Ruler column with dynamic metrics | | | | | | 3.2 | 0.38 |
| Overview ruler column with dynamic metrics | | | | | | 3 | 0.41 |
| Package tree with dynamic metrics | | | | | | 2.4 | 0.29 |
| CCRC | | | | | | 2.1 | 0.94 |
| Collaboration View | | | | | | 3.7 | 0.11 |

6. Concerning the overall performance of Senseo, do you think it provided you with added value in terms of:

| | Yes | No | Result (yes-percentage, n = 15): |
|---|-----|----|----------------------------------|
| High-level understanding (eg. package-level collaboration) | | | 87% |
| Low-level understanding (method structure, collaboration, control flow, etc.) | | | 73% |
| Understanding dependencies between different artifacts | | | 80% |
| Feature localization, feature understanding (identifying and understanding artifacts implementing a specific feature) | | | 67% |
| General program understanding | | | 73% |
| Performance assessment or optimization | | | 53% |
| Software quality assessment | | | 53% |

8. After using Senseo, do you think it provides you with added value for your daily work on maintaining or developing software systems?

| Yes | No |
|-----|----|
| | |

**Result (yes-
percentage,
n = 15):**

87%

Thanks for participating in the experiment and for completing this questionnaire!