Perceived Knowledge Gaps - five-point likert scale from "strongly disagree" to "strongly agree" [1 – strongly disagree, 3 – somewhat agree, to 5 – strongly agree]

1. My knowledge was insufficient to carry out these tasks.
2. These tasks made clear to me that I lack some knowledge.
3. I sometimes got stuck when trying to execute these tasks.
4. These tasks were too difficult to finish.
5. I felt that I did not manage to complete these tasks.

Cognitive Dissonance – five-point likert scale from "strongly disagree" to "strongly agree" [1 – strongly disagree, 3 – somewhat agree, to 5 – strongly agree]

1. Sometimes I was uncomfortable answering these questions.
2. At times I worried that some of my answers were inconsistent with my other answers.
3. If I were allowed to, I would go back and change some of my responses.
4. Some of the answers I gave in these tasks were inconsistent with my previous beliefs about the topics.
5. I was always certain about my responses
6. I never had difficulty putting together all of the topics required to solve these tasks

State Curiosity – five-point likert scale from "strongly disagree" to "strongly agree" [1 – strongly disagree, 3 – somewhat agree, to 5 – strongly agree] [How do you feel right now, at this moment]

1. I want to know more
2. I am feeling puzzled
3. I want things to make sense
4. I am intrigued by what is happening
5. I feel like asking questions about what is happening
6. Things feel incomplete
7. I feel like searching for answers
8. I want to explore possibilities
9. My interest has been captured.

Germane Cognitive Load – five-point likert scale from "strongly disagree" to "strongly agree" [1 – strongly disagree, 3 – somewhat agree, to 5 – strongly agree]

1. This activity really enhanced my understanding of the content that was covered.
2. This activity really enhanced my understanding of the problem/s that was/were covered.
3. This activity really enhanced my knowledge of the terms that were mentioned.
4. This activity really enhanced my knowledge and understanding of how to deal with the problem/s covered.
5. I invested a very high mental effort during this activity in enhancing my knowledge and understanding.

Extraneous Cognitive Load – five-point likert scale from "strongly disagree" to "strongly agree" [1 – strongly disagree, 3 – somewhat agree, to 5 – strongly agree]

1. The explanations, instructions and clues in this activity were very unclear.
2. The explanations, instructions and clues in this activity were full of unclear language.
3. The explanations, instructions and clues in this activity were, in terms of learning, very ineffective.
4. I invested a very high mental effort in unclear and ineffective explanations, instructions and clues in this activity.

Response to Problematizing Scaffold– When presented with the clue, choose what did you do:
1. I ignored the clue, without bothering to explain why the evidence presented in the clue should or should not be considered
2. I rejected the clue, because I was able to come up with an explanation for why the evidence presented in the clue should not be considered
3. I excluded the evidence presented in the clue from the domain of my preexisting task knowledge, without making any judgment about validity of the evidence
4. I thought to deal with evidence presented in the clue later (if need be), and continued with my original line of reasoning based on preexisting task knowledge
5. I reinterpreted the evidence presented in the clue, as something that was already explained by my original line of reasoning based on preexisting task knowledge
6. I changed peripheral aspects of my original line of reasoning based on preexisting task knowledge (performed minor modifications), using evidence presented in the clue
7. I changed core aspects of my original line of reasoning based on preexisting task knowledge (performed major modifications), using evidence presented in the clue