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Online Problem Solving

1.Which problems did you work through?

- The Three Jugs Problem http://www.cut-the-knot.org/water.shtml
- Tower of Hanoi https://www.mathsisfun.com/games/towerofhanoi.html
- The sheep, the cabbage and the wolf http://www.plastelina.net/game1.html

2.Which problem was the easiest to solve?

- Tower of Hanoi was the easiest to solve.

3.Why was it easy to solve?

- because it gave me a condition that helped me organize my thinking, and it was visually distinct objects that I can easily move. I was able to predict when the move was going to be a success or failure due to the visual representation. Therefore, the different colors and sizes of the desks helped me reach a solution faster

4. What type of problem was it (see Kirkley, 2003 article pg. 8)? Explain.

- Well-Structured, as the solution strategy was predictable (no large desk onto a smaller one). Therefore, it became a step-by-step process. There were no multiple solutions.

5.What strategy did you use to solve the problem?

- Logic combined with experimentation as I wasn't sure of how my logical thinking would look like until I tried it.

6. How did you develop this strategy?

-I tried random first, then I went back and I read the problem. I reminded myself that the larger desk needs to be at the bottom. I visualized the solution. I tried to get to it, logically.

7. What declarative knowledge was needed to solve this problem?

-Factual knowledge as I needed to "*know what*" needs to be true for the arrangement of the desks.

8. What procedural knowledge was needed to solve this problem?

-I needed to know how to order sizes in a decreasing order, largest at the bottom

9. Which problem was the most challenging for you to solve?

-The three jugs

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10. Why was it difficult to solve?

-the check marks all looked the same and the boxes too.

11. What type of problem was it (see Kirkley, 2003 article pg. 8)? Explain.

- Moderately structured, as there were many strategies to follow, but one solution - convergent

12. What strategy did you use to solve the problem?

- Trial and error

13. How did you develop this strategy?

- I could not see how else to do the problem, I tried thinking logically but all checks move at the same time, there was no option for me. I tried to think mathematically, abstractly, I could not. I discovered that I am a visual learner that likes colors.

14. What declarative knowledge was needed to solve this problem?

- Conceptual declarative knowledge, I could not figure out the “know that”. There is a relationship between these numbers. I could not relate them easily.

15. What procedural knowledge was needed to solve this problem?

-operations (addition and subtraction) to get to a certain desired answer.