

# Strike a light

## PURPOSE

To demonstrate that intrinsic motivation is a more powerful motivator when tasks require cognitive skill and creativity. Also how creativity can be enhanced by looking beyond the functional labels we assign to things.

## TAGS

purpose, intrinsic motivation, creativity, performance management

## OVERVIEW

The candle problem, first used by Karl Duncker in 1945 demonstrates two principles of creativity and motivation, functional fixedness, and the importance of intrinsic motivation. In the experiment participants were asked to attach a candle to the wall. To do this they are provided with a box of thumbtacks, a candle, and a matchbook. Most people will attempt to melt the candle to the wall or attach it with the thumbtacks. The way to actually complete the challenge is to empty the box the tacks come in and tack it to the wall and put the candle in it. Most people don't think of this initially because of what Duncker calls functional fixedness, the box provided is for carrying tacks not to be used in the activity.

A subsequent study by Sam Glucksberg, used the candle problem to demonstrate the power of incentives. Glucksberg gathered his participants and told them he was going to time them to see how quickly they could solve the candle problem. In addition, each group had different conditions:

- He told one group that he was going to time them to determine how long it typically took people to solve this type of problem.
- When it came to the second group, he offered them a reward: he told them that if they were in the 25% that solved the problem the fastest, they would get \$5.00. In addition, the person who was the fastest of all would get \$20.00.

It took the second group—that is, the group that was offered the reward—three and a half minutes longer, on average, to solve the problem than it took the first group. In other words the people without



## Materials

- A box filled with drawing pins
- A box of matches
- A candle
- External reward, money, bottle of wine etc

external incentives completed the task much quicker than those who didn't. An incentive that was supposed to sharpen focus and enhance creativity did just the opposite: it dulled thinking and blocked creativity.

## DISCUSSION POINTS

1. Functional fixedness, people tend to have a bias as to what an object is used for, and this bias interferes with their ability to be able to notice or come up with other, novel uses for that object and blocks creativity.
2. The solution to the problem is to stop thinking of the box of thumb tacks as a “container”, and to instead think of it as a “shelf” or “platform”. The label we give to things stop us seeing novel ideas.
3. Extrinsic motivation works better for tasks with a simple set of rules and a clear destination to move toward (see the variation) but blocks more creative solutions from team members.
4. As long as the task involved only mechanical skill, bonuses worked as they would be expected: the higher the pay, the better the performance.”
5. If a task calls for even rudimentary cognitive skill, a larger reward led to poorer performance.
6. A London school of Economics studied fifty one pay for performance plans and found that financial incentives mostly result in a negative impact on performance

### Task

Divide the delegates into two groups or choose two participants from the group. Tell the first group they will get a reward if they can achieve the task first. Tell the delegates:

- Your task is to attach the candle to the wall so that it doesn't drip on the table / floor below, without using any additional elements.

### Variation

Glucksberg later redid the same experiment, except this time, when he presented participants with the box, the box was empty and the thumb tacks were on the table beside it. In other words, he made the problem easier because once the box wasn't being used as a container it took less mental flexibility to be able to assign a different function to it. This time, the group that was being rewarded finished the task a lot faster than the other group.

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