TRAINING TOOLKIT: MARSHMALLOW CHALLENGE

TRIAL-AND-ERROR MINDSET & HIDDEN ASSUMPTIONS



WHAT IS MARSHMALLOW CHALLENGE?

The Marshmallow Challenge is an activity aiming at introducing a new mindset of collaboration and problem-solving. With the task, the idea of hidden assumptions is introduced. We often unawarely make assumptions on unknown factors and these hidden assumptions are possibly flawed. They can be disastrous if we fail to test and validate them. The Marshmallow Challenge is a practical tool for reflecting and improving working style.

LEARNING OBJECTIVES

- Strategies in innovative problem solving
- Hidden assumptions which exist in every project

WHY MARSHMALLOW CHALLENGE?

- Inspiring ideas with practical changes in the workspace
- Engaging hands-off experience

TIME AND GROUP SIZE



18 mins for task + 20 mins for debriefing

2 - 40 participants; ~ 3 - 5 per group

MATERIAL (PER GROUP)

20 sticks of spaghetti

1 meter of tape

1 meter of string

1 marshmallow

INSTRUCTION

- Build the **highest stable** tower with the material provided
- The marshmallow must be on the **top** of the structure
- 18 minutes will be given
- Once the time is up, participants must not touch or hold the structure

OPTIONAL

- Let the teams know how much time is left
- Call out the performance of different teams
- Warn the teams that holders shall face disqualification

STEPS

- Divide participants into groups of 3 to 6 people. Distribute the materials.
- Clearly explain the goal and the instructions of the challenge. Make sure they understand the instructions and the goal. Then, you can kick off the challenge by starting the countdown.
- During the 18 minutes, you can let the teams know how much time is left in your own pace and preference. Calling out the performance of different teams to remind the team that it is a competition. In the later part of the challenge, perhaps the last 3 minutes, you can warn the teams that holders shall face disqualification.
- When the time is up, let everyone sit down and look at the towers built by other teams. Announce the winner.
- You can start the debriefing by asking some general questions e.g. asking teams to evaluate their performance and guess the underlying meaning of the challenge. Then you can explore the message on problem solving and hidden assumption with the suggested debriefing questions.

PERFORMANCE OF PREVIOUS PARTICIPANTS

Business school graduates performed the worst while kindergarteners did the best!!

You may be surprised by the results that kindergartens out-played business school graduates. Let's take a look at how people usually attempt to the challenge.

Typical business school graduates spend a lot of time on planning, striving to find the "single" and "best" solution. Unconsciously, they may engage in the within-group competition for status. They are less likely to make critiques to the on-going process due to concerns about interpersonal issues such as pride or face. At the very last minute, they put the marshmallow onto the well-built tower. Guess what? In most of the cases, the tower cannot support the weight of the marshmallow and the whole structure fell.

On the other hand, kindergarteners do not spend most of their time on planning. They usually adopt a **trial-and-error approach**. They build **prototypes** of structure. Whenever they spot a mistake, they **respond quickly** and frankly to modify their prototype. In the whole process, they **frequently test** their unfinished structure.

SUGGESTED DEBRIEFING QUESTIONS

Problem solving

How do your team work as a group?

How do you contribute as a team member?

How do your group come up with the design?

Do you have a prototype and modify it over and over? Or do you only have one plan?

Hidden assumptions

Are you aware with the marshmallow in the beginning?

Do you underestimate how the marshmallow affect your tower?

What do you think the marshmallow represents?

INSIGHT-



PROBLEM SOLVING

The first thing we can learn from the experience is a **new mindset** in problem-solving.



Comparing the performance of graduates and kindergarteners, we can list some skills which traditionally trained graduates may forget.

- prototyping
- assertiveness
- iterating

Forming an early prototype instead of looking for a "best" answer allows more space for testing the feasibility or effect of a plan. During the collaboration, a culture of assertiveness can promote quick responses regarding possible mistakes or improvement of the existing plan. One should bear in mind that every success requires repeated testing and validation. Following one single plan from the beginning to the end is not leading to a great acomplishment.

INSIGHT—



HIDDEN ASSUMPTIONS

The marshmallow represents a hidden assumption, which can possibly exist in every project.



So what is a hidden assumption? In the case of marshmallow challenge, we made the **assumption** that the marshmallow is **light** and it **would not affect the structure's stability**. In fact, many teams failed only after putting the marshmallow onto the tower after finished everything else.

In reality, we often have preset assumptions about unknown factors, e.g. costs, demands, clients' expectation, and underestimate their impact. If we fail to make things clear and test our assumptions, we can make fatal mistakes. During planning or problem solving, it is necessary to locate hidden assumptions and run experiments, like how the kindergarteners test their tower and the marshmallow.

WHY YOU MADE THIS DECK?

Thank you for going through the whole guide book! Hope you find this useful.

I am Peter Chan, the founder of TreeholeHK, a corporate training consultant that provides **psychology-based training solutions**.

These skills have been highly effective in my training practice — and I hope to share them with more L&D professionals so we can share the fruits from psychology research.



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