

Brain-Writing and Bubble-Sorting

IDENTIFYING AND PRIORITIZING OPPORTUNITIES FOR
INNOVATION IN PROBLEM SOLVING

ALBUQUERQUE QUALITY NETWORK SEMINAR

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General Problem Solving Process

- ❖ Identify Problem (possibly including root-cause analysis)
- ❖ Brainstorm solutions
- ❖ Vote or otherwise prioritize solutions
- ❖ Develop action plan based on most likely solution
- ❖ Implement action plan, determine (based on measurement) if action plan was successful in solving the problem, and then determine next steps (i.e., “SA” in the “PDSA” cycle)

Typical Brainstorming Approach

- ❖ Flip Chart in front of the group
- ❖ Ideas are identified by the group members and are either written directly on the Flip Chart or are placed on Post-it Notes and placed on the Flip Chart
- ❖ Common ideas are often grouped to simplify
- ❖ At some point, the identification of ideas is ended and the group moves to voting or prioritizing.

Issues with Brainstorming

- ❖ Ideas are typically generated without much opportunity to consider ideas from others in the group
- ❖ Number of ideas generated can often be limited based on time allotted or Flip Chart space.
- ❖ Role of the facilitator (Flip Chart manager) may affect opportunities for more thorough consideration of ideas.
- ❖ Someone with a unique idea may not be comfortable putting it on the flip chart if he/she does not see any previously-posted similar idea.
- ❖ If Supervisor is participating, employees may not feel totally comfortable sharing their ideas...possibility of consciously or subconsciously deferring to the Supervisor (this issue would be dependent on the personality of the Supervisor and the dynamics between him/her and the employees)

Brainwriting

- ❖ No posting of ideas directly on Flip Chart – paper is used to capture ideas (through “idea strips”) with a certain number of ideas per page
- ❖ Members of the group have an opportunity to review the ideas from other members as they consider additional ideas (greater opportunity for innovation)
- ❖ Group agrees to fill in all pages to the best of its ability to exhaust ideas (greater opportunity for innovation)
- ❖ With this approach, there would be a greater comfort level with contributing ideas since it is a less “public” approach
- ❖ Often, recognition is given to the “silliest” idea proposed – notion is that it may not be that silly! Another opportunity for innovation

Bubble-Sorting: Prioritizing Ideas after Brainwriting

- ❖ Pages are cut along the “idea strips” that are then aggregated and sorted based on previously-agreed to criteria (e.g., time to implement solution, cost, likelihood of success)
- ❖ Strips are sorted typically using “bubble” sort.
- ❖ Ideas that “bubble” to the top typically are implemented (often the “low-hanging fruit”), although other ideas that may not have bubbled to the top may be considered especially if they are innovative and worth pursuing (often with some associated risk).
- ❖ In the spirit of continuous improvement, no ideas are eliminated – if the top idea does not work, the next one in order may be implemented next.

Brainwriting Process

- ❖ Team is sitting around a table with one more blank page than there are participants (with large group, there are often several tables working concurrently)
- ❖ Each member of group picks a blank page and writes his/her first idea in the first space and puts page back into middle of the table.
- ❖ The first member to put the page back takes the additional blank page to write his/her second idea in the first space.
- ❖ All other members will pick up a page that already has an idea on it and write his/her second idea in the second space.
- ❖ This continues until all pages are filled with ideas (or until exhaustion kicks in!).

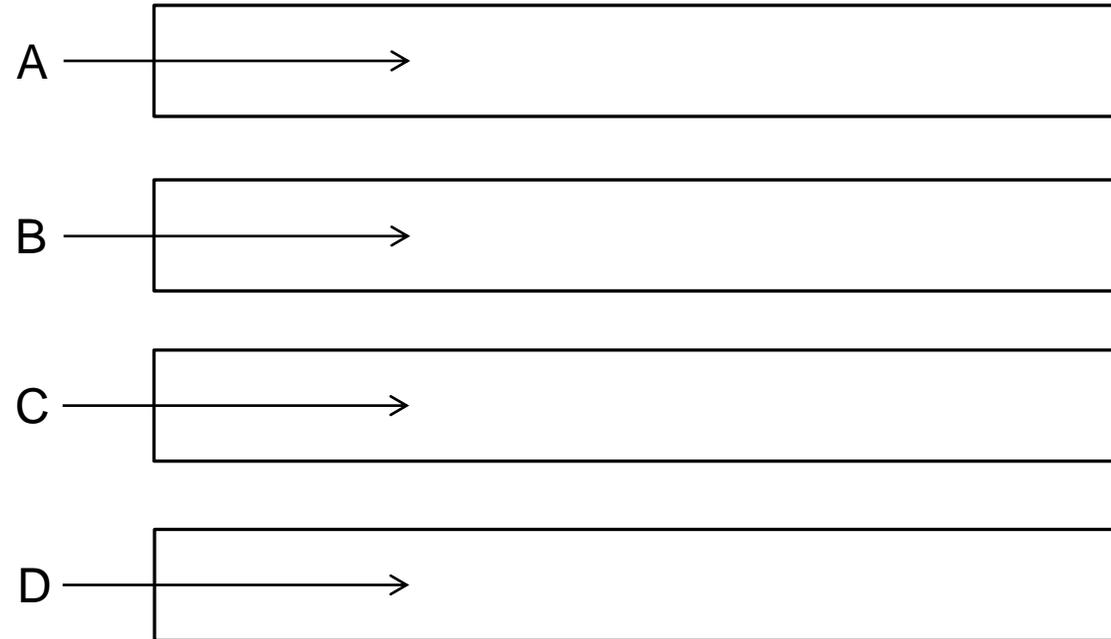
Brainwriting Example

First Idea Here →

Brainwriting Example

First Idea Here →	
Second Idea Here → (from different participant – either a new idea or an “amendment” to previous idea on the page)	

Bubble Sort Example



Based on the Prioritizing Criteria, which solution (A or B) is preferred? If B is preferred to A, you switch the order. You then compare C to whichever solution is directly above it (A or B). If C is preferred, you switch the order. This continues until the entire set has been prioritized.

Keys to Effective Brainwriting

- ❖ Be open-minded and perceptive of what ideas have already been generated on the page.
- ❖ Determine a reward for the “silliest” idea to be voted on by the group (opportunity for innovation).
- ❖ Take your time and try to look at all angles of the problem (the other ideas may facilitate this).

Problem Statement (in question form) for Exercise – Choose one of the two below

1. How can the Albuquerque Quality Network best achieve our mission (educate the Albuquerque community on quality principles and processes to improve organizational performance) in these times of instant communications, heavy work schedules, economic challenges, etc.?
2. How can other communities in New Mexico develop and maintain a similar program/organization to the Albuquerque Quality Network given limited resources, time, and competition?

Prioritizing Criteria

Likelihood of success	33%
Cost	33%
Timeliness to completion	33%

Note: These percentages could differ depending on the type of problem, the current state, urgency, etc.

Exercise

Each table will brainwrite ideas to address the problem (30 minutes).

Each table will identify the most likely idea to implement based on the Criteria, a second idea that may be innovative, and a third idea that the table thinks is the “silliest” idea (10 minutes).

Each table will report out the most likely idea to implement and the innovative idea (10 minutes).

Each table will then report to the full group on the silliest idea for group voting (5 minutes).

The entire group will vote on the absolute “silliest” idea, and the person who came up with that idea will receive a gift (5 minutes).

Conclusions

- ❖ We cannot continue to focus on the easy solutions (the “low-hanging fruit”) - innovation is critical during these economically-challenging competitive times.
- ❖ Brainwriting offers the same opportunity for “group think” as traditional brainstorming but with many more opportunities for innovation.
- ❖ The bubble sort approach is an effective way of prioritizing the ideas generated through a brainwriting approach.
- ❖ If you are going to invest the considerable time and energy in problem solving and decision making, having it be more fun couldn't hurt!