



Unit 6 Developing Innovation & Creativity

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Apply problem-solving steps and tools
- ✓ Use individual and group techniques to help generate creative ideas

Unit 10

Developing Innovation & Creativity

The RAP Model

Companies maintain a competitive edge by enhancing existing products and developing new products. To accomplish this goal, we need to train ourselves to think differently about our existing products and services. However, being faced with enhancing an existing product to create a new product can be quite a creative challenge. Enter the RAP model.

The RAP model has been designed to get you thinking about how to create new products and services from existing products and services. The model asks questions to help give focus to your thinking and to help you view a product in a different light. Here is a breakdown of the acronym and the questions associated with each of the concepts.

R: Replace

What materials or components could you substitute to make a new product?

R: Remove

How can you simplify your product and reduce it to its core functions?
How can you make this product more efficient?

R: Reorder

How can you change the order or rearrange the use of this product?
What components could you substitute to change the order of this product?

A: Amalgamate

What products or services could you combine to make a new product?
What items can you integrate to create a new product?
What components can you put together to maximize the uses of this product?

A: Amplify

What features could you add to amplify this product?
What components could you change to give this product a different look and feel?
What components could you add to your product to give it more consumer value?

A: Alter

How can you adapt this product to serve another purpose or use?
What are others doing in your industry to adapt and change their products to the market?

P: Put to another use

Instead of scrapping a product, would there be a way to use this idea somewhere else?

Case Study

An excellent example of the RAP Model at work is the invention of the sticky note. In 1968, Dr. Spencer Silver was attempting to develop a super-strong adhesive, but instead he accidentally created a low-tack, reusable adhesive. For years, Silver promoted his invention but had little luck finding a proper use for the product. In 1974, a colleague of Dr. Silver's came up with the idea of using the adhesive to anchor his bookmark in his hymn book, and so the sticky note was born!

With the help of a colleague, Dr. Silver managed to create a new product from an existing product. The men **altered** an existing product and **put an existing product to another use**.

Summary

Use the questions in the RAP model as a guide to brainstorm potential ideas for developing an existing product or for creating a new product. Your goal in the brainstorming process is to generate as many ideas as possible. Do not eliminate ideas until you have exhausted the creative process. As you get comfortable using the technique, alter and add questions. Having the right questions to fit your problem can help the idea generation stage go much more smoothly.

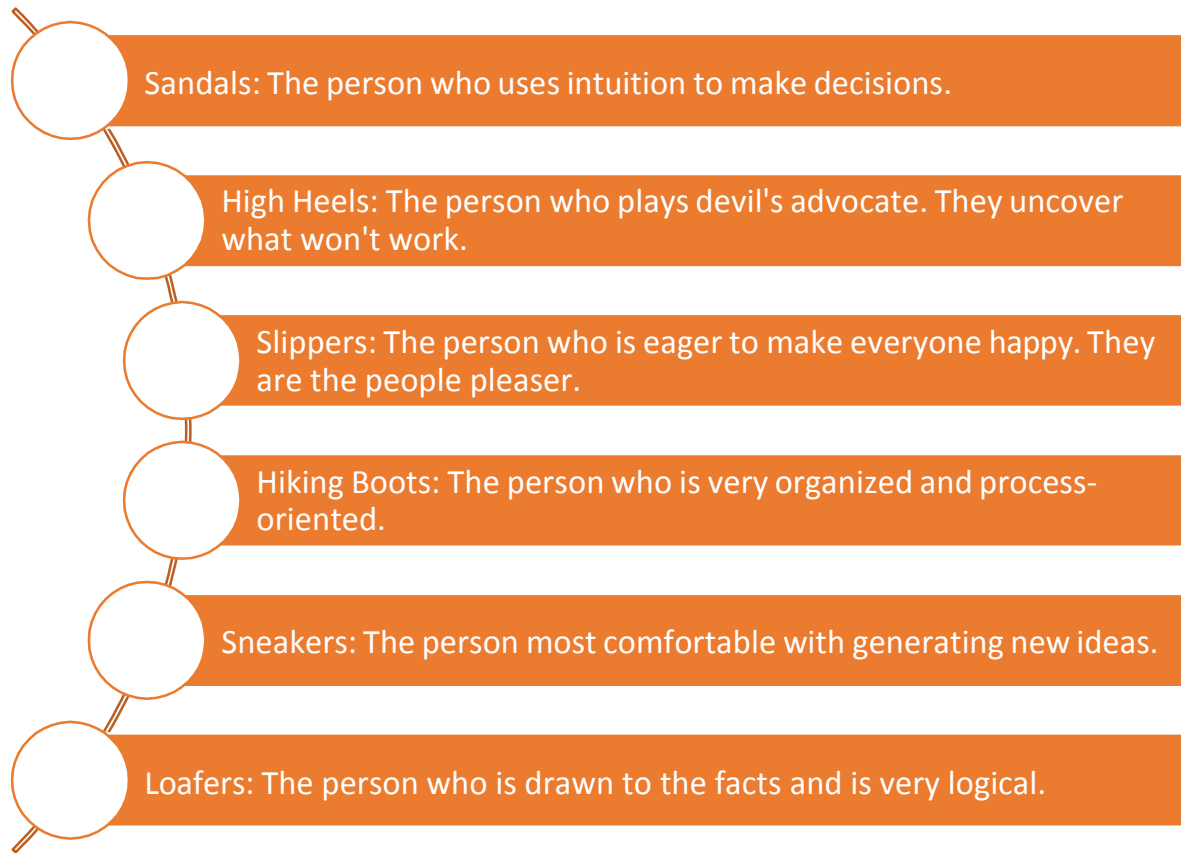
The Shoe Swap Technique

Isolating your thinking to examine an issue can bring about great insight and perspective. Human beings can naturally jump toward a particular issue in both their thinking and feelings. They can move from being neutral to being optimistic in seconds. This “waffling” makes planning and coming up with ideas a difficult task, especially in a group setting where some people are uncomfortable speaking their mind. This is particularly common when there is conflict or competition among members of the group.

The shoe swap technique calls for members of a group to each play a thinking role. Each member selects or is given a pair of shoes that represents a role or certain style of thinking. The roles associated with each pair of shoes are based upon the six dominant thinking styles that emerge in group settings:

- The creative person
- The fact-based person
- The intuitive person
- The process-oriented person
- 👤 The devil's advocate
- The people pleaser

The model below gives a breakdown of the shoes and what style of thinking each pair represents.



When employing this technique, it is important to note that certain people will better identify with certain roles. Although there are probably two or three roles that we can each identify with in some ways, most people tend to fit in one category or thinking style the best. Alternatively, there are some thinking styles that will bring people out of their comfort zone. For example, a person who likes to keep the peace and please others may find it slightly uncomfortable playing the devil's advocate.

There are a variety of ways to implement this technique. You could have each person pick the role they are most comfortable with. If you know the group you are working with well enough, you could assign people roles they may not normally assume.

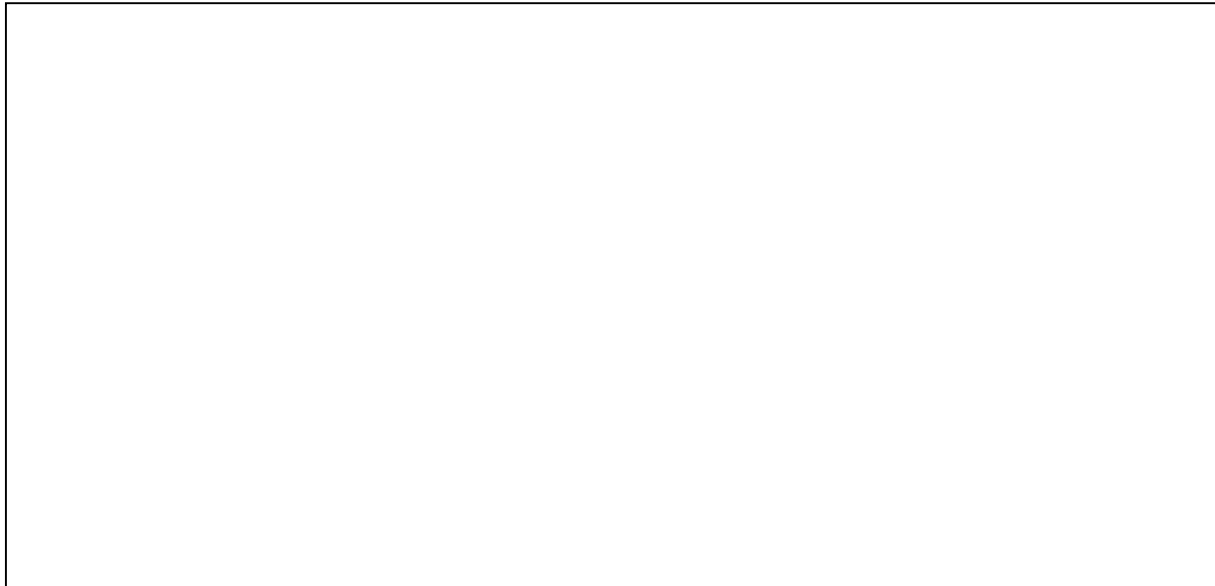
Stretching a person's comfort zone can enable them to view things from a different perspective, but you don't want to make people feel too uncomfortable. Make sure they are stretched just enough but not so much as to hinder the activity's progress.

An additional approach would be to have all members of the group assume the same role at the same time. Once many ideas have been generated, have all the group members switch to another role.

This technique is useful for understanding different perspectives. Since the roles represent the six dominant thinking styles that emerge in group settings, role playing these styles can help give us great insight into how other people think. For example, if you are a loafer person (drawn to facts and very logical), you may find it very difficult to identify with and understand a sandal person (uses intuition to make decisions). This technique teaches you about other thinking styles and can give you a better understanding of why people act as they do.

Walk A Mile

Use the space below to draw a picture of your shoe style.



Use the shoe swap technique to come up with strategies to assess and deal with this problem: “Due to budgetary cutbacks, your department is restructuring and reorganizing in order to consolidate workflow. This means that everyone’s job responsibilities are being reassessed and will change.”

Using Mind Mapping

Understanding Mind Mapping

Mind mapping is a creative technique that helps to organize a main idea and its major sub-topics. This visual aid helps the mapper break a complex idea down into manageable chunks.

Here is how to create a mind map.

1. On a piece of paper, put your main idea at the center of the map. Try to limit the amount of words needed to describe your main idea. Be clear and concise to avoid unnecessary clutter on your map.
2. Major sub-topics related to the main idea branch off from the main idea. Write or draw these sub-topics in a circular shape around your main idea. Draw a line between the main idea and the sub-topics to indicate the link between ideas. Again, use only a couple of words to describe your sub-topics.
3. You can add another layer of information to your map by adding detail to your sub-topics. Write or draw this information around your sub-topics.
4. The third step can be repeated as many times as required. This will give your idea greater focus and your map greater detail.

This technique is a great tool to help flesh out all of the parts associated with an idea. When something is written down, it helps to move the idea from being abstract to being concrete and can help you to feel less overwhelmed with your task. Additionally, visualizing the parts of an idea can help prevent overlooking something vital.

The physical layout of the mind map also lends itself to easily adding more information. As well, this technique can be as creative as you like. To add a little spice to your map, you can add drawings to represent the main idea and its sub-topics.

Creating a Mind Map

To help you fully understand the concept, here is an example of a mind map.

Step One: Write a list of the main topic and the sub-topics.

Main Topic:

Ñ Vacation to Italy

Sub-Topics:

Ñ Get Passport

Ñ Flights

Ñ Hotel

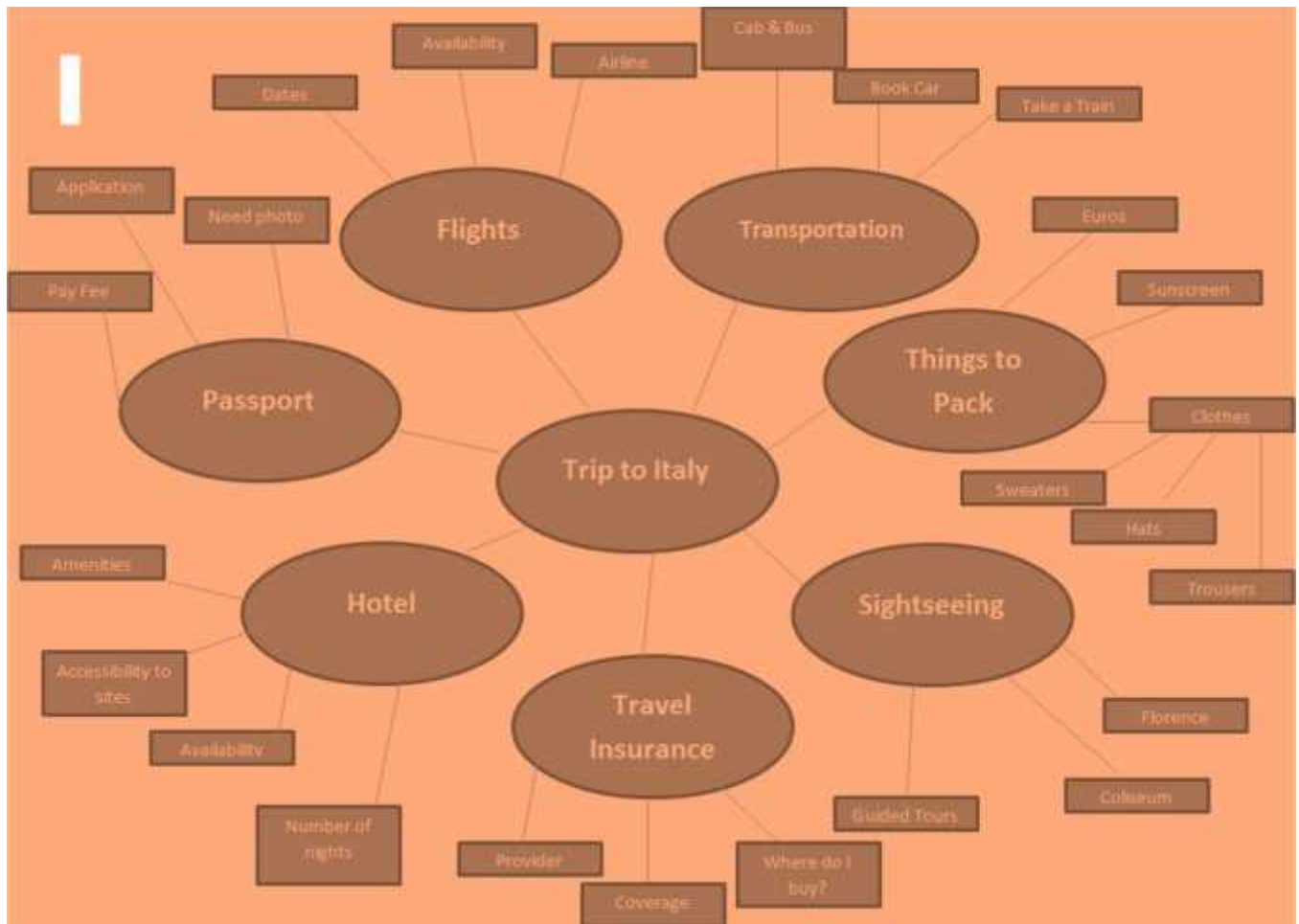
Ñ Sightseeing

- Ñ Things to Take
- Ñ Travel Insurance
- Ñ Transportation

Step Two: Begin constructing your mind map. Place the main topic at the center of your map. Place your sub-topics in a circular shape around your main topic. Use lines to show the relationship between your main topic and sub-topics.



Step Three: Enhance your mind map by adding relevant information to your subtopics and modifying them as needed.



Map It Out!

Create a mind map using the following scenario: Imagine your team has to write and deliver a presentation to the company stakeholders. What information do you need to consider in order to complete this task?

Metaphors and Analogies

Defining Metaphors and Analogies

Metaphors and analogies can be great tools for sparking creativity. A **metaphor** is a figure of speech that compares two unrelated objects. A simple equation for creating metaphors is “The (first item) is a (second item).” Examples:

- Ñ His mind is a prison.
- Ñ My hamster is a king.

An **analogy** is a figure of speech that compares two unrelated objects in order to show a point of similarity. Here is an example of an analogy: “In life, you need to take the old out of your backpack in order to put the new in. Sort through the tools you have, keep the ones you need, and leave room for ones to develop.”

The analogy between the contents of a backpack and personal development tries to emphasize that personal development is a continual process of evaluation. Just like carrying a backpack, you cannot carry everything and you must evaluate what tools are important for you on your journey.

While metaphors and analogies may seem similar, they are not. Remember, a **metaphor** compares two unlike objects. An **analogy** compares two unlike objects in order to show a point of similarity.

Using Metaphors and Analogies to Express Ideas

Using metaphors and analogies can be a great creativity exercise as they help us view a concept through a different lens. By looking at these objects in a different light, we create the opportunity to forge unexpected connections. Additionally, metaphors and analogies paint a descriptive picture of a concept. If a concept is particularly difficult to understand, it may be easier to grasp if it is reframed using one of the above techniques. For example, saying “The heart of the car is its transmission” is a lot easier to understand than explaining how other parts of the car (such as the alternator, pistons, sensors) would not function without the transmission working properly. The beauty of this metaphor is that even if we know nothing about transmissions, instantly we have some insight into how vital this part is to a vehicle. One point to remember when using metaphors and analogies is to make sure your audience will understand the references. When someone hears a metaphor or analogy, the message being sent should automatically ring true. If you use obscure references unknown to your audience, your message will fall flat. Using a well-known metaphor like, “Time is money” will probably resonate more with your audience than saying, “Making money is a Sisyphean endeavor.”

Make a Metaphor

Use the words listed here to make as many metaphors as you can in ten minutes. These metaphors can be as silly, fun, and creative as you like. You can use a word more than once if necessary.

Remember: A simple equation for creating metaphors is “The (first item) is a (second item).”

Love	Rally	Radish
Tennis	Heart	Home
Red	Blood	Rock
Ball	Celery	Tuna

3. Brainstorm as many answers to the questions posed as possible. Allow all ideas to be written down. Do not attempt to filter ideas at this stage.
4. When you have completed your brainstorming, look at the ideas that have been generated. Reverse all of these ideas into solutions for your original problem.
5. Assess your solutions. Are any of the ideas viable?

Case Study

Linda's department has just installed a new program for billing. Lately, the department has received a high volume of complaints with customers confused about the layout of the new monthly statements.

Linda has scheduled a meeting with her staff to address the issue. After checking for any glitches in the software program, she has narrowed down the problem to be: "How do we inform our customers about the new layout of the monthly bill in the effort to increase customer satisfaction?"

Instead of posing this question to her staff, Linda decides to implement the situation/solution reversal. Linda arrives at the meeting and asks the following question: "How do we keep our customers in the dark about the new layout of the monthly bill in the effort to decrease customer satisfaction?"

Linda notices looks of surprise on the employees' faces as she instructs them to generate ideas for how we can achieve this goal. She also instructs them to write down whatever ideas they can think of; the process for filtering ideas will come later.

The group generated the following potential solutions:

- Hang up on the customer when they call
- Be rude to the customer when they call
- Change the layout again to confuse them even more
- Don't include anything extra in the next monthly bill to explain the changes

When the idea generating stage slows, Linda instructs her team to look at each idea and reverse it.

The group's reversed solutions were:

- Be polite to the customer when they call
- Be patient with a customer when they call
- Assure customers that this layout change will be in place for some time to come and that their department is doing everything they can to minimize confusion
- Assure customers that the billing department will be including some literature in the next monthly statement to explain the changes

Linda found that the Situation/Solution Reversal technique worked well with her employees. The group was enthusiastic about the approach and had fun in the creative process. The reversed solutions

Bring on the Toys!

The Nine Intelligences

Howard Gardner's theory of multiple intelligences has given us great insight into the way people learn. Gardner's theory encompasses nine different intelligences (described below). While individuals can possess different intelligences, they normally fit into one mode of intelligence best.

Verbal-Linguistic

This person has fantastic verbal skills and is the quintessential wordsmith.

Mathematical-Logical

This person has the ability to think abstractly and is quite good with numbers.

Musical

This person has musical ability. They can produce rhythm and understand pitch.

Visual-Spatial

This person is able to think in images and pictures. They can visualize what is not concretely in front of them.

Bodily-Kinesthetic

This person has great control over their body and is able to handle objects in a skillful manner. (Think of a basketball player or a gymnast.)

Interpersonal

This person has emotional intelligence. They are able to navigate and respond to the moods of others.

Intrapersonal

This person is highly self-aware. They are quite clear on what their inner attitudes, values, and beliefs are.

Naturalist

This person is one with nature. They are adept at interacting with the natural world.

Existential

This person questions the meaning of human existence. They ponder questions such as "How did we get here?"

This theory has also given us great insight into the way people learn. We now know that some people learn better by hearing (auditory), by seeing (visual), or by hands on (bodily-kinesthetic). This information is important when we are trying to tap into our own creativity and the creativity of others.

Offering people a creative alternative to solving a problem can be a great method to jump-start their thinking. Instead of offering the traditional paper and pen approach, give people the opportunity to problem solve using methods listed below. This is a great way to be creative, solve a problem, and have fun in the process!

Draw Instead of Write

Sometimes, in the beginning stages of generating an idea, it can be hard to express in words what you are thinking. Drawing offers an alternative method to express what you are trying to verbalize. Additionally, a drawing can help trigger other thoughts and make new connections between ideas.

With the drawing technique, the creator often has more freedom than with verbalizing an idea as language can be a restrictive structure. Drawing also has the added benefit of transforming an idea from being abstract to concrete. Being able to “see” the idea can help give you greater focus and a better understanding of what you need to do.

Think of drawing your dream house. You could describe, in words, to your builder what the house would look like. However, differences in interpretation could result in you having the house you don’t want. Drawing a blueprint helps you and others to better see your vision.

Use Objects

Using objects (like modeling clay or building blocks) can also be a great creativity technique. As with drawing, using objects makes a problem physical – it’s now something you can touch. This technique suits those who learn best by doing rather than hearing or reading about a problem.

Using objects is especially good when we are in the beginning stages of idea generation. Objects can help us better understand the problem, which is vital for generating solution-based ideas.

Draw It Out! Problem

Solutions

Encouraging Creativity in A Team

Brainstorming

About Brainstorming

The creation of the concept of brainstorming is credited to Alex Osborn. Osborn was an advertising executive who first published the idea in his 1953 book *Applied Imagination: Principles and Procedures of Creative Thinking*. Brainstorming can be an individual activity or a group discussion centered on either creating ideas or solving a problem.

Creating Ground Rules

One requirement for brainstorming is that there needs to be a safe environment for people to share their ideas. Members of the group should all feel comfortable in contributing their thoughts. A way to create this safe environment is to have some ground rules for your group brainstorming sessions. These rules can be created by the group and might looklike:

- Ñ Everyone must contribute.
- Ñ No idea gets criticized, no matter how unconventional.
- Ñ Be considerate of those around you. Allow a person to finish their thought before jumping in.
- Ñ One person speaks at a time.

Having guidelines can help to create a safe environment without hampering the creative spirit needed to produce innovative ideas. Additionally, if rules are not in place you may have outspoken group members taking over the session. If this happens, great ideas can be overlooked or a solution could be settled upon too early, resulting in a less than optimal solution.

Another key component to brainstorming is that wild ideas should be encouraged and criticism should be avoided. Group members should be able to use this safe space to suggest ideas that may be overlooked.

Finally, brainstorming sessions should be used to build and enhance ideas. For example, if one group member suggests an idea, other group members should be encouraged to build upon and enhance it.

Individual Brainstorming

While group brainstorming has the advantage of offering plenty of perspectives, individual brainstorming should also be promoted. A benefit of individual brainstorming is that you have more time to think about creating an idea or solution. Some people just need more time to process or perhaps they think better alone. Allowing individuals to percolate an idea can sometimes offer the breakthrough your organization needs!

Additionally, when we are in a group setting we sometimes have a tendency to focus on something that one person says. This focus may deter people from generating new ideas. Having distance, time, and individual brainstorming sessions helps to make sure you don't overlook vital information.

Plan It Out!

Brainstorm some possible solutions for one of the following scenarios:

- Ñ A company needs to increase product sales
- Ñ How to save money (personal or work)
- Ñ A company needs to recruit engineers
- Ñ A topic of the group's choice

Rolestorming

In the 1980's, Rick Griggs developed the concept of **rolestorming** in the book *Quality at Work: A Personal Guide to Professional Standards*. Rolestorming is a variation on the brainstorming technique. While brainstorming is a group discussion held in the effort to solve a problem or generate lots of ideas, rolestorming is a group discussion which involves each member of the group taking on the role or character of another person in the effort to solve a problem.

The essence is that by taking on the identity of another person, rolestorming offers participants the opportunity to see things from a different perspective. The hope is that the group members will then generate ideas they may have otherwise overlooked. Additionally, since each group member is now playing a part, they may feel less inhibited and more comfortable offering ideas that may have been considered unconventional or "off the wall" in a regular group brainstorming session.

After each person has chosen who they want to be, they should get into character by asking themselves some important questions:

- Ñ How does my character view the world?
- Ñ How would my character solve this problem?
- Ñ What would my character's stance be toward the problem or situation? What would be their attitude?

When taking on the role of others, be sure **not** to take on the identity of someone in the room or someone the group is familiar with. Taking on the role of a familiar person could be potentially hurtful if they are being portrayed in a disrespectful or degrading manner.

People may struggle with this technique, especially if you have any introverts in your group. People may also struggle with fully getting into character if their boss or team leader is in the room. Allow group members to ease into the task and do what they feel comfortable with. Do not be critical of ideas generated while in character.

To relieve anxiety, you may want to ease people into this technique by warming up with another technique, such as the shoe swap.

Case Study

Let's look at an example of how this tool might be used to generate solutions.

You have a new business where you make and sell jewelry. One of your newer employees keeps missing shifts and does not call in ahead of time to let you know or arrange for a replacement worker. You have tried speaking with the employee to no avail. To solve this problem, you are going to rolestorm to help think of creative solutions.

For this particular problem, you will assume Donald Trump, the business icon, as a character.

The **first question** is, "How does Mr. Trump view the world?" You know that he believes that time is money and that he is notoriously hard on people with poor performance.

The **second question** to ask is, "How would Mr. Trump solve this problem?" Based on what you know of him, you think he would solve the problem by firing the employee for poor performance or reprimanding the employee in some way, like garnishing the employee's wages.

The **third question** is "What would Mr. Trump's stance be toward the problem or situation? What would be his attitude?" You think Mr. Trump would first garnish wages, and if the employee's behavior did not change, he would fire them for poor performance. Mr. Trump's attitude would be that this is your business and you have to protect its integrity. You can always get another employee, but starting a new business is another story.

You now have a plan for action to solve your problem.

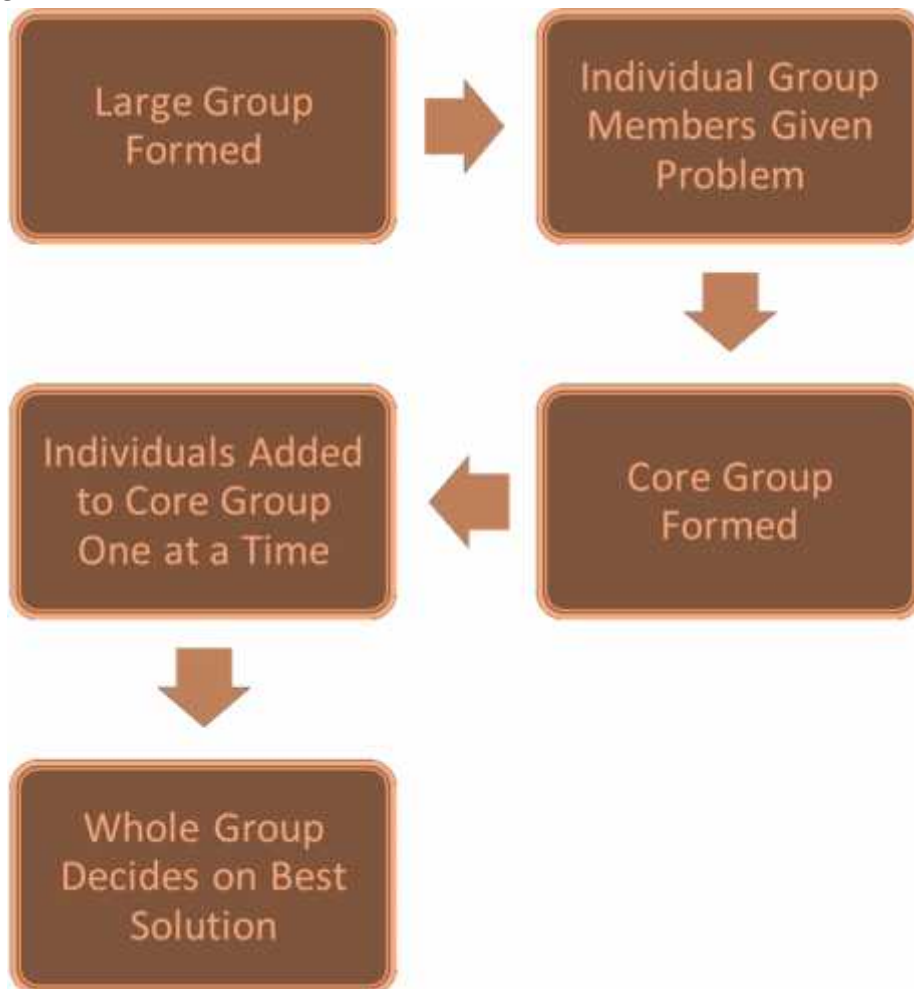
The Stepladder Technique

What is the Stepladder?

Developed in 1992 by Steven Rogelberg, Janet Barnes-Farrell, and Charles Lowe, the stepladder technique offers a new tool to help groups with the decision-making process. This technique is designed so that each member of the group gets an equal opportunity to voice their ideas. By introducing group members' ideas in succession, the stepladder technique guards against one person taking over the group and ensures that all members of the group are accountable. It also gives each member a chance to voice their ideas.

One important point to consider when using this technique is the size of your group. If a group has 20 members, this process may be too time-consuming. Smaller group sizes (ten or less) would be best suited for this approach.

Stepladder Model



Here is a breakdown of the flow chart presented above.

1. The group working on an issue is formed.
2. Each individual group member is presented with the problem. They are given time to think about the issue and are expected to create potential solutions.
3. Out of the group members, a core group of two members from the larger group is formed. These members begin discussing the solutions they have created.
4. A third member is added to the core group. This third member presents their solutions to the first two members. Only after the new member has presented their ideas can the whole group talk about possible solutions. This process repeats until every individual member of the group is assimilated into the larger group.
5. Once all members have presented their ideas, the whole group can decide on the best solution.

Brainwriting

Brainwriting is similar to the brainstorming creativity technique. Both approaches are used to create ideas in the effort to solve a problem. However, the difference between the two is the process through which the ideas are generated.

Brainwriting has taken the basic principles of brainstorming and enhanced them to guard against some of the downsides of group brainstorming, such as members of the group taking over the session or members not contributing. These drawbacks can affect the group's decision as great ideas may be overlooked or a decision may be arrived at too hastily. In the effort to get more ideas generated, brainwriting was born.

Here are the steps for conducting a brainwriting session:

1. Write the problem on a whiteboard or flip chart paper.
2. Give each member of the group a piece of blank paper. To make this a little more fun, each member could also be given a large, oversized sticky note to write on.
3. Nominate one member to be the chairperson.
4. For the next five minutes, each group member will individually write four ideas on how to solve the problem. No discussion should be allowed, but can take place after ideas have been generated. (Get the chairperson to keep track of time for this step.)
5. After the five minutes have elapsed, the chairperson collects the papers, mixes them up, and distributes them (so that each person now has another group member's sheet).
6. The chairperson will give the group five minutes to write new ideas or to build upon the ideas already written.
7. Steps 5 and 6 are repeated as many times as necessary.
8. When finished, whole group discussion takes place. The solutions presented by group members should be posted for all to see.

Brainwriting allows all group members to contribute equally. As well, because ideas are written, quieter group members may feel more comfortable sharing their ideas and more ideas may be generated than in a discussion setting. When the process is silent, group members have the ability to

New Manager

focus solely on their own thoughts without worrying about repeating an idea, forgetting an idea, or feeling embarrassed by sharing an idea.

Furthermore, more ideas are generated in terms of volume. In a traditional brainstorm, one idea would be shared at a time. With brainwriting, you have multiple ideas being written at the same time. Not only does brainwriting generate more ideas, it generates them faster.

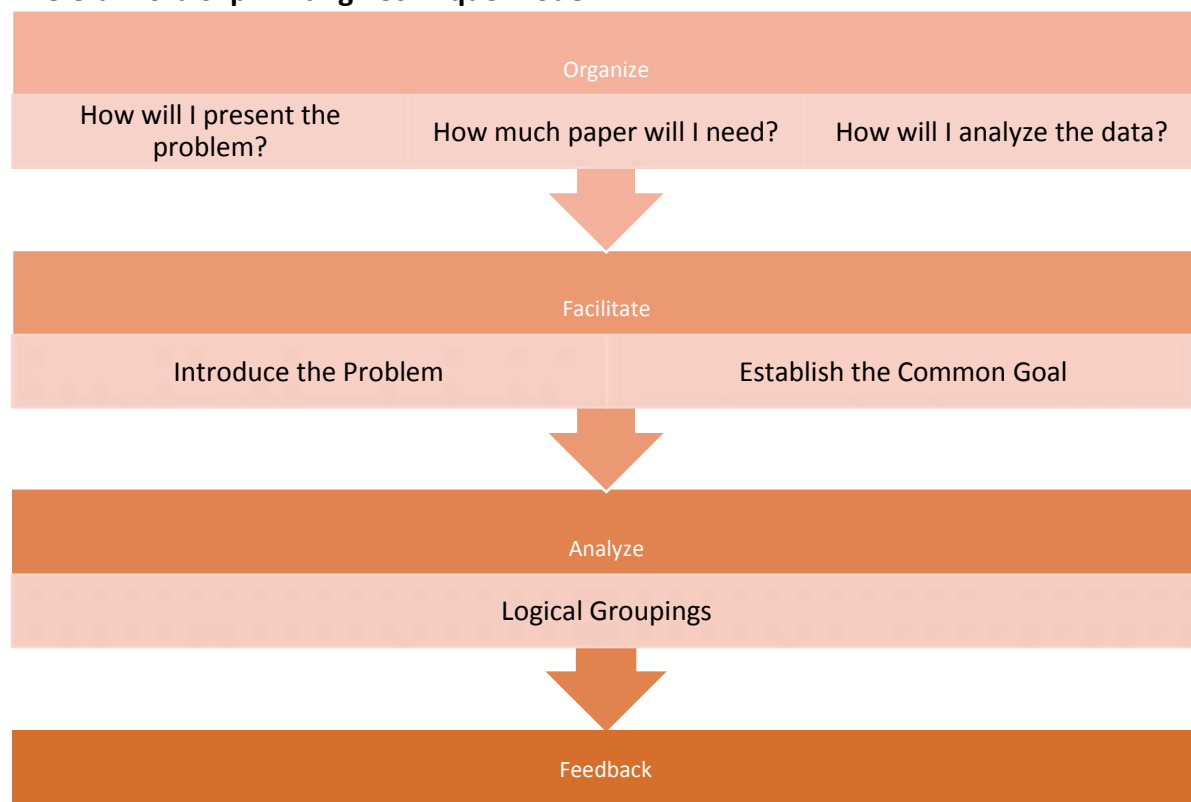
The Slip Writing Technique

About the Slip Writing Technique

The Crawford Slip Writing technique was developed in the 1920's by Dr. C.C. Crawford, a professor at the University of California. This method of idea generation is similar to brainstorming, but instead of a discussion, it uses pieces of paper to capture ideas from a group. The Crawford Slip Writing technique was designed for use with large groups of 50 – 5000 or even more!

Since dealing with such large numbers can be overwhelming, Dr. Crawford sought to invent a technique that would offer organization while allowing each group member their say and an equal chance to contribute.

The Crawford Slip Writing Technique Model



As you can see from the flow chart, there are four main steps in this model.

Organize.

Since you are dealing with a large group of people, you need to organize and prepare effectively. You need to figure out how you will present the problem to the group and how you will analyze the large volume of data collected from the group. Have ample pieces of paper or sticky notes ready; estimate about 30 per group member. These will be distributed to each member before the problem is presented.

Facilitate.

Introduce the problem to the group in a clear and concise way. It is vital that everyone understands what is expected of them. Establish the common goal by informing the group that the objective here is to get as many solutions as possible. Let people know that each idea must be written on its own piece of paper. Advise them to write down as many ideas as possible. The facilitator will use their discretion and end the idea generating session when writing slows. At the end of the session, inform the group that feedback on the session will be given soon after the data has been analyzed.

Analyze.

Sort data into groups that are logical depending on the nature of the problem that needs solving. For example, if your company is looking to create a service in order to break into a new market, you could organize your data into the following categories: market research ideas, advertising ideas, new service ideas etc.

Feedback.

As a professional courtesy and sign that you value the contributions of participants, feedback should be given as soon after the session as possible. If possible, this feedback should include the direction decided upon.

Putting It All Together

Nancy Clue and the Case of the Software Upgrade

Case Study

Nancy Clue's company wants to change from OfficePro 2000 to OfficePro 2020 because of compatibility issues with documents received from customers. Nancy has presented the idea to her colleagues but she is getting resistance about the upgrade. People are hesitant to change the software they have been working with for years. Nancy has discovered that this attitude is primarily because of a previous botched software upgrade.

A couple of years before she started in her position, the company tried to install new accounting software. The employees were notified of the intention to upgrade the software and were told to save all of their accounting documents to the shared company server. They were also told this accounting software was extremely user friendly. The employees went home for the weekend and when they came

Rolestorming Notes

Create a mind map to represent these ideas.

Choose the best idea to use as a solution.

Give a brief but detailed description of how you will implement this solution.

Further Reading:

- ✓ Miha Skerlavaj, Matej Cerne, Anders Dysvik, Arne Carlsen, *Capitalizing on Creativity at Work: Fostering the Implementation of Creative Ideas in Organizations*, Edward Elgar Publishing, 2016.
- ✓ Patrick Collister, *How to Use Innovation and Creativity in the Workplace*, Pan MacMillan, 2017.
- ✓ Dr. Robert Epstein, *Creativity Games for Trainers: A Handbook of Activities for Jumpstarting Workplace Creativity*, Training McGraw-Hill, 1996.