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Improvement Cymru Academy Toolkit Guide

Divergent & Convergent Thinking

Introduction

Divergent and convergent thinking is an effective way for you to find solutions to your organisational problems as a team by generating new ideas (divergent thinking) and focusing on an agreed solution (convergent thinking). This structured, combined approach ensures inclusivity and creativity in effective problem solving and decision making, when it is culturally and psychologically safe to do so.

Divergent thinking fosters collaboration between you and your team to identify and develop several new ideas and/or solutions to a problem. Embracing creativity, diversity and open mindedness, your whole team are enabled to make varied suggestions, consider several options and see a clearly defined problem from different viewpoints, without being judged or experiencing 'push back.' It's a safe space where new ideas and innovation are encouraged and celebrated.

Convergent thinking can then help you and your team to prioritise, focus and refine all these ideas to find and agree a solution to a problem; it does not require creativity and is purely logical in its approach. Convergence aims to form a single answer using speed, accuracy and logic and by carefully considering all the information available to you, provides opportunity for you all to agree on the best possible idea to take forward and subsequently implement, reflect on and evaluate (please see Model for Improvement Toolkit Guide).

Rationale

Combining a balance of creative and rational approaches to problem solving creates an inclusive, collaborative, innovative approach to your improvement. It also encourages focus and prioritisation in the implementation of your improvement ideas and shared ownership of decision making.

Background

The cognitive processes of divergent and convergent thinking were introduced by psychologist J.P Guildford in 1956. The theory behind divergent thinking, based on being curious and explorative without restrictions, is that creativity and innovation thrive resulting in generating ideas. Convergent thinking on the other hand, based on logic, evidence and critical evaluation, relates to finding the single best practical solution to a problem or make an informed choice about a change solution.

When to use:

Divergent thinking could be considered to:

- Identify a problem
- Explore the cause of a problem
- Generate potential solutions to a problem
- Rethink processes or systems
- Engage with diverse groups and ensure inclusivity
- Generate creative ideas

Convergent thinking could be considered to:

- Analyse and refine ideas
- Focus on a solution
- Facilitate shared decision making
- To make practical plans for innovation
- Decide on a measure so we know change is an improvement (please see Family of Measures Toolkit Guide)

How to use:

This guide will identify and explain how to apply both divergent and convergent tools:

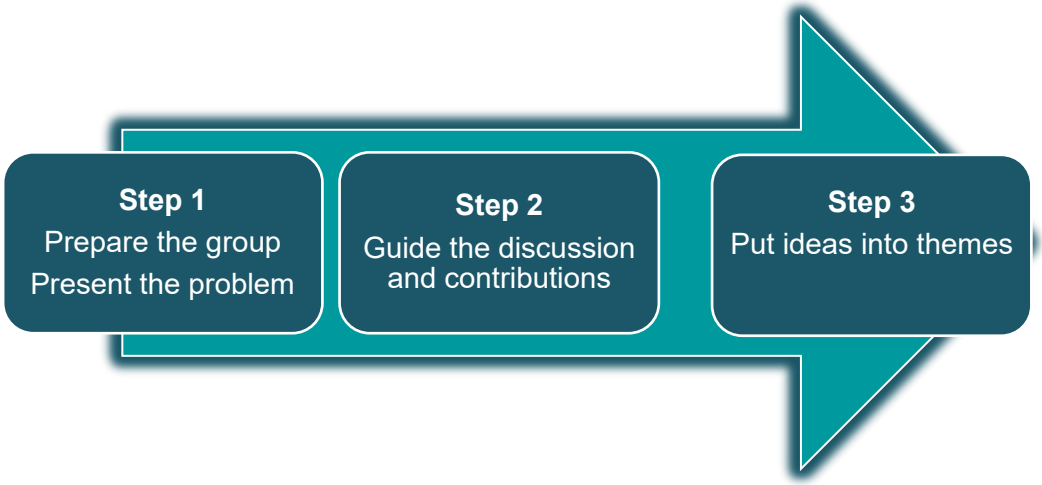
Divergent thinking tools

Divergent thinking typically occurs in meetings where there is time to explore as many ideas as possible. It is important to ensure there is space, respect and appreciation for the ideas that are generated by your team. Brainstorming and nominal group technique are examples of divergent thinking techniques.

Brainstorming

Brainstorming is a quick, creative and productive way of identifying issues, generating ideas or solving problems in your team. It is collaborative, where all stakeholders can freely share their ideas and thoughts, but it relies on you and your team feeling psychologically safe.

It's important to ensure that all the right and relevant stakeholders are present at your brainstorming session, those who are involved in, concerned or impacted by the process or problem. Consider involving a diverse group of individuals e.g. those who have different thinking styles and staff or patients from other departments to capture a variety of ideas, different ways of thinking and new perspectives (please see Involving Others Toolkit).



The 3 steps of brainstorming:

Step 1 - Prepare the group: when conducting your session, designate a facilitator, ideally someone who is not a participant so they can oversee the session and communicate at the beginning that a brainstorming session is about to take place, so team members are prepared to explore ideas and be innovative. Your facilitator can also manage timings and keep teams accountable and succinct.

Present the problem: Your facilitator needs to clearly present the problem for discussion and clarify the focus.

Step 2 - Guide the discussion: An icebreaker activity to start can enable your team to 'think out of the box' and gives permission to be creative, perhaps outside of their comfort zone or work persona. Your facilitator should encourage quick, free and

creative thinking, ask questions to provoke thinking and offer support, jotting down all ideas - it is about quantity rather than quality of ideas. A great way to do this is to capture each idea or contribution on a sticky note.

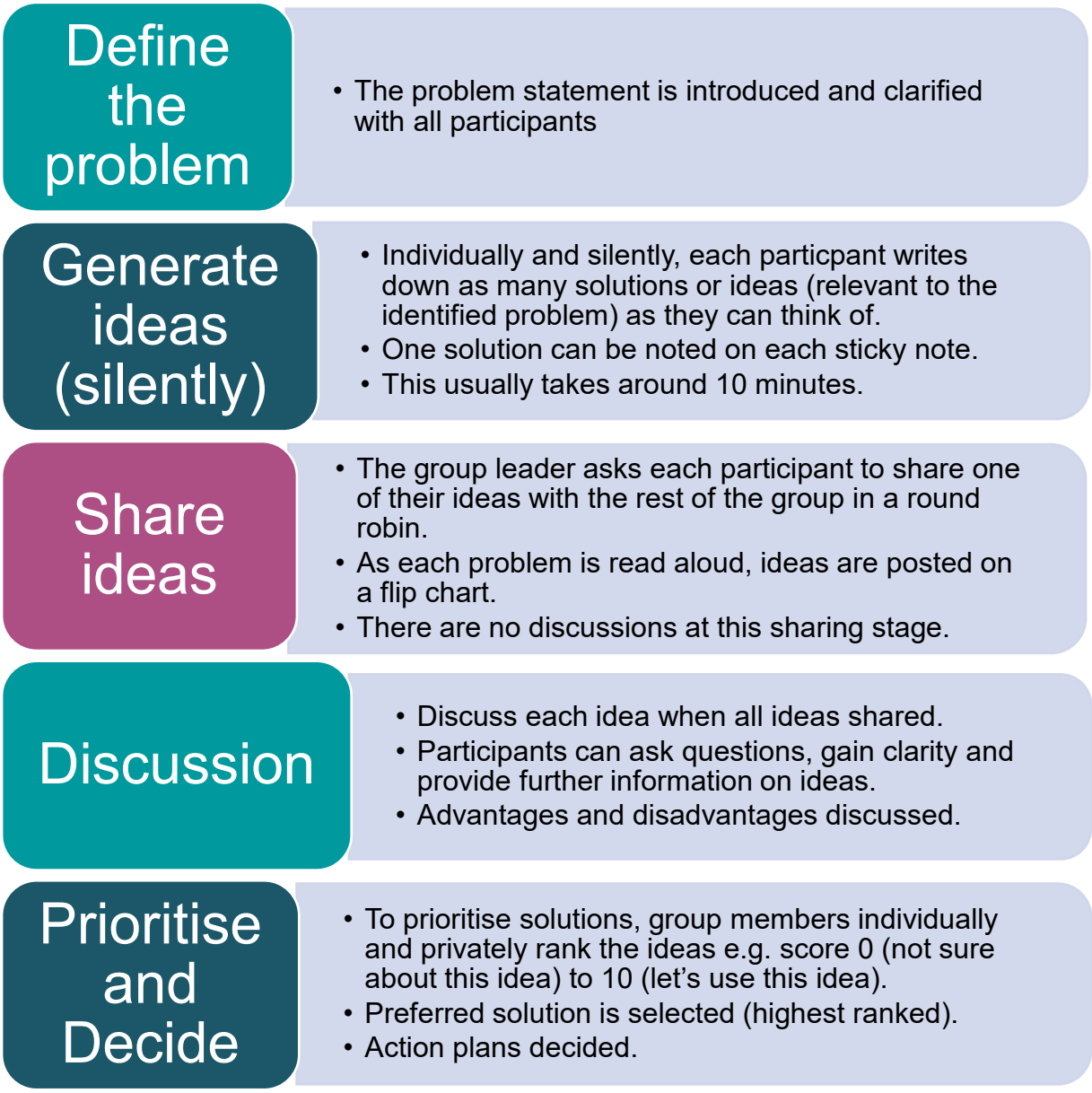
During this stage, your facilitator should reassure your team that there is no such thing as a wrong or silly idea and ensure a balance of the group ideas being generated. It is important that ideas are not criticised, rejected or refused - this can stifle growth, be damaging to self-esteem and essentially stops innovation, as people do not feel safe to express their opinions without judgement.

Step 3 - Group all ideas into themes: when everyone has run out of ideas, the individual sticky notes can be added to a large piece of paper or wall space and grouped into key themes.

The Nominal Group Technique

Nominal Group Technique is designed to aid decision making, support creative thinking, encourage diverse participation and promote collaboration within teams, as each member can share their ideas in a safe and supportive space. This is usually made up of around 8 group members and a group leader.

You can use this technique when your team is new, or some of your team members are more confident/vocal than others to ensure all voices are heard. It can also be useful for reducing conflict, for example when the subject matter may be considered controversial or divisive. This is a safe and supportive way for group members to feel heard, respect for their opinions and have their ideas considered; as the group rank the ideas being presented, the focus is on the outcome and not the individual, making this process a collaborative and supportive one. It's a shared process and a vital tool within improvement.



Nominal Group Technique

VIDEO: Please click the following link to watch a brief YouTube video, developed by Institute of Healthcare Improvement (IHI), explaining the link between divergent and convergent thinking processes, illustrating both brainstorming and nominal group techniques.[1]

[1] Please note that subtitles are available, and playback speed is adjustable within the video settings icon, should these be required

Convergent thinking tools

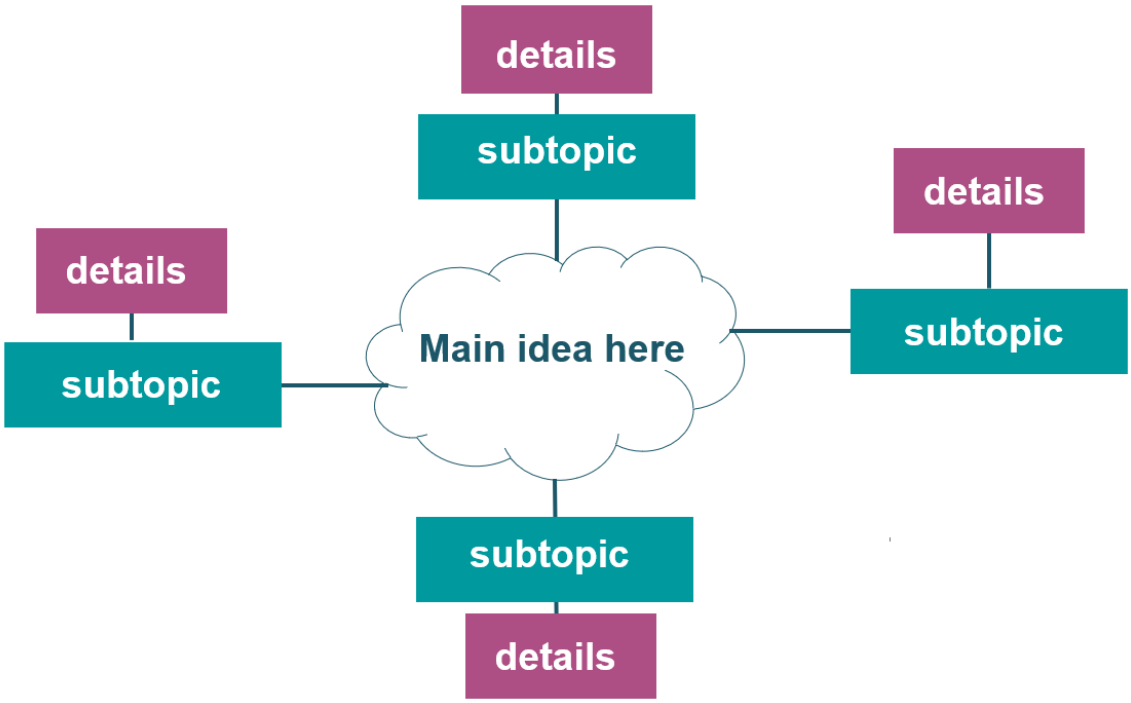
Convergent thinking is the opposite to divergent thinking as it is outcome focused and seeks to provide solutions that have been generated from a set of ideas, data points or objectives. Convergent thinking is very efficient as it works systematically to provide a solution. One of the drivers when finding a solution is to find the highest value idea, so value plays a vital role in convergent thinking.

The following are additional examples of convergent thinking techniques:

- Clustering ideas
- The Ease Benefit Matrix

Clustering ideas

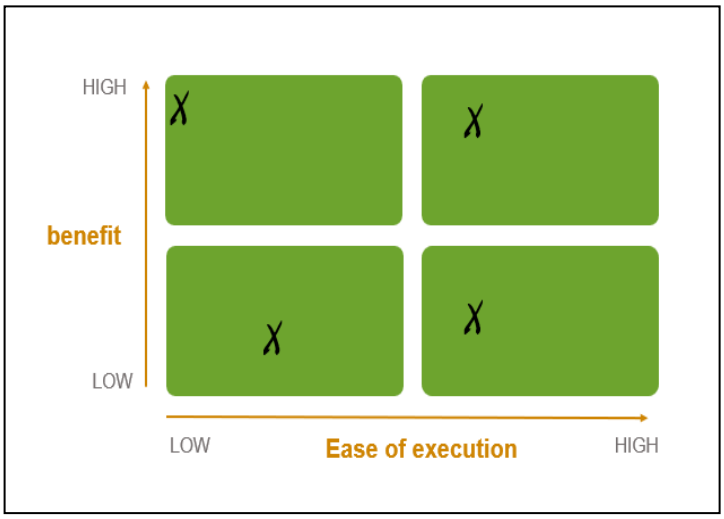
Clustering is a fantastic way to organise ideas. It is simply, grouping ideas together to form a cohesive selection focussed on one topic or theme as illustrated below.



The Ease Benefit Matrix

If you will have a few ideas to begin with for your project, a great way to help you decide which project or idea to choose it to utilise a convergent thinking tool, such as the Ease Benefit Matrix. This tool is helpful to determine which ideas are the easiest to implement with limited time and resources that also have the highest benefit.

Each idea is placed into one of the quadrants of the matrix below, making it easy to visualise the groupings. This allows you to focus on an idea that will provide the biggest impact with the least amount of effort. The matrix divides your ideas into four categories:



1 Easy to implement with low impact (bottom right quadrant)

2 Easy to implement with high impact (top right quadrant)

3 Hard to implement with low impact (bottom left quadrant)

4 Hard to implement with high impact (top left quadrant)

Ease benefit matrix: Hartman, Sifonis and Kador (2000).

For your first project you should pursue the ideas in the 'easy to implement with high impact' i.e. top right quadrant.

You can use the Ease Benefit Matrix template at the end of this toolkit guide.

VIDEO: There are several ways to focus ideas and establish the highest value ideas, other examples include multi voting, rank ordering and structured discussion, which are all helpful tools as illustrated in the second IHI video explaining how to progress and support convergent thinking.

What next?

Once you have gathered all your ideas (divergent thinking) and agreed your focus (convergent thinking), next you will need to design a robust plan to action the idea and evaluate the impact of the change. Please see Model for Improvement Toolkit Guide for more information on methodology for developing, testing and evaluating improvements and testing changes by applying Plan Do Study Act (PDSA) cycles.

Helpful tips for divergent thinking

- Use this approach to open minds and generate ideas
- Keeping a journal is a fantastic way to capture ideas before your brainstorming meetings
- Ensure you ask questions that spark curiosity to build team rapport and gain understanding. For example: *I'm curious to know, I wonder if, what if...?*
- Write freely on blank paper, use your creativity to explore your ideas
- Know your team, divergent thinkers tend to have outgoing personalities, love being creative and are open to change

Helpful tips for convergent thinking

- Use this approach to make progress
- Think positively when faced with a problem, rather than looking at potential pitfalls, this supports team members to collaborate and as a positive outlook on a project/problem/objective.
- Here are some convergent thinking words that can support your stakeholder or project team to find a solution: *decisions, categorise, clarify, guidelines, make sense of….*
- It's helpful to be consistent and persistent with your rationale, as it's easy to become side tracked with the many ideas that will be presented to you.
- Know your team, convergent thinkers tend to be more comfortable with routine, order, and analytics. These can be beneficial assets when focusing on a single outcome.

Additional resources

If you are interested in learning more about how improvement practices can benefit your workplace, we offer a range of training courses. Visit Improvement Cymru Academy website for more information or email us improvementcymruacademy@wales.nhs.uk to find about the improvement courses we offer.

Further reading

Hartman, A., Sifonis, J. G. and Kador, J. (2000) *Net Ready – Strategies for Success in the E-conomy,* McGraw-Hill.

Institute for Healthcare Improvement. Open School. Divergent and Convergent Thinking Part 1 Available online at: https://youtu.be/CUcyBgxR9js?si=qUoySvb3Fb6JPsiq [Accessed on 17/04/25]

Institute for Healthcare Improvement. Open School. Divergent and Convergent Thinking Part 2 Available online at: https://youtu.be/cEYm6Ewxvc8?si=iTDO1xqLwiRT78C_ [Accessed on 17/04/25]

Langley, G.J et al. (2009*) The Improvement Guide: A Practical Approach to Enhancing Organizational* 2nd edition. Jossey-Bass: USA.

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Runco.M, A. (1991) *Divergent Thinking*. Praeger: USA.

Runco M, A (2013) *Divergent Thinking and Creative Potential (Perspectives on Creativity Research)* Hampton Press INC International Concepts: USA.

Ease Benefit Matrix Template