

Improvement Cymru Academy Toolkit Guide



Divergent & Convergent Thinking

Introduction

Divergent and convergent thinking will help you to develop solutions to your problem. Divergent thinking is one of the most fundamental ways of problem solving in an organisation; it is a fresh and innovative way that compliments traditional ways of thinking. Divergent thinking enables enabling stakeholders to develop and innovate new ideas, where it is culturally and psychologically safe to do so. It allows the team to see a problem from lots of different viewpoints, as well as embracing creativity and open mindedness. Introduced by psychologist J.P Guildford in 1956, the rationale behind divergent thinking is based on being curious and explorative without restrictions.

Convergent thinking is a problem-solving technique where a variety of ideas from a range of fields are brought together to find a solution to a clearly defined problem. It carefully considers all the information available and provides the single best possible outcome, using logic and knowledge to solve the problem, achieve an objective or make a decision. Convergent thinking was a term created by American psychologist Joy Paul Guildford, known for his psychometric study of human intelligence, meaning the ability to give the 'right' answer.

Rationale

Divergent thinking facilitates a group to focus on solutions to a problem and generate as many ideas as possible, without being judged or experiencing 'push back.' It's a safe space where new ideas and innovation are encouraged and celebrated.

Convergent thinking does not require creativity and is purely logical in its approach. Its aim is to form a single answer using speed, accuracy and logic. A criticism of convergent decision making is that it can be inflexible in its approach and does not give room for ambiguity.

Types of divergent thinking

There are a range of brain storming techniques and within this guide you will see examples of the Nominal Group Technique, Ease Benefit Matrix and Clustering Ideas.

Brainstorming

➤ What is brainstorming?

Brainstorming is a proven and productive way of generating or solving ideas. It is collaborative where all stakeholders feel valued and heard, it builds relationships as teammates bond through sharing ideas and solving them, which then provides a lot of value for organisations and teams.

➤ Who is present in a brainstorming session?

It's important to ensure the right and relevant stakeholders are present at your brainstorming session, it could also be beneficial to have individuals who have different thinking styles so there is a variety of ideas and ways of thinking. It can also be beneficial to have members from other departments who can offer their ideas from a new perspective, providing they are aware of the focus of brainstorming session.



When conducting your session be sure to designate a facilitator, this person oversees timings, which are important for thinking as well as keeping teams accountable and succinct. A

facilitator also asks questions to provoke thinking and offering support. A facilitator cannot be a participant as their role is to oversee the session and to keep a balance of the group and ideas being generated.

➤ How brainstorming sessions take place

At the beginning of any brainstorming session, it is important to communicate that a brainstorming session is about to take place, to prepare team members that they will be exploring ideas and being innovative.

Start the session with an icebreaker activity, to enable people to 'think out of the box' and give permission to be creative and be outside of their comfort zone or work persona.

Brainstorming is about being creative, fun, and thinking freely. Brainstorming is about quantity not quality, they're about quick thinking and jotting ideas down. A great way to do this is to ask the group to capture each idea or contribution on a

sticky note. When everyone has run out of ideas, the sticky notes can be added a large piece of paper or wall space.

➤ **The role of divergent thinking in different types of brainstorming techniques**

Divergent thinking typically occurs in meetings where time is given to explore as many ideas as possible. It is important to ensure there is space, respect and appreciation for the ideas that are generated. It usually consists of five to seven team members; this enables the group to generate ideas and small enough for each member to be heard.

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. It's important to note that convergent thinking looks at the solutions and outcomes of the ideas that have been generated.

The Nominal Group Technique

Nominal means 'in name only'. It's designed to support creative thinking and avoids conflict within teams, as each member can share their ideas in a safe and supportive space.

Quiet time

The nominal group technique starts with a quiet time where members of the group write down as many solutions as they can think of; one solution on each sticky note. It consists of up to 8 group members and a group leader.

Forming ideas

After a given time, when all participants have finished writing their problem definitions and solutions, the group leader asks each member to share one of their ideas with the rest of the group.

Sharing ideas

As each group member reads their problem aloud, their ideas are posted on flip charts for each group member to see. It's very much a shared process and is a vital tool within improvement. The process then continues with each group member until all the ideas have been shared. The group then can discuss the advantages and disadvantages of the ideas that have been shared.

Once the group, have generated ideas, it is time to select the preferred solution/s. This is convergent thinking.

Thinking time

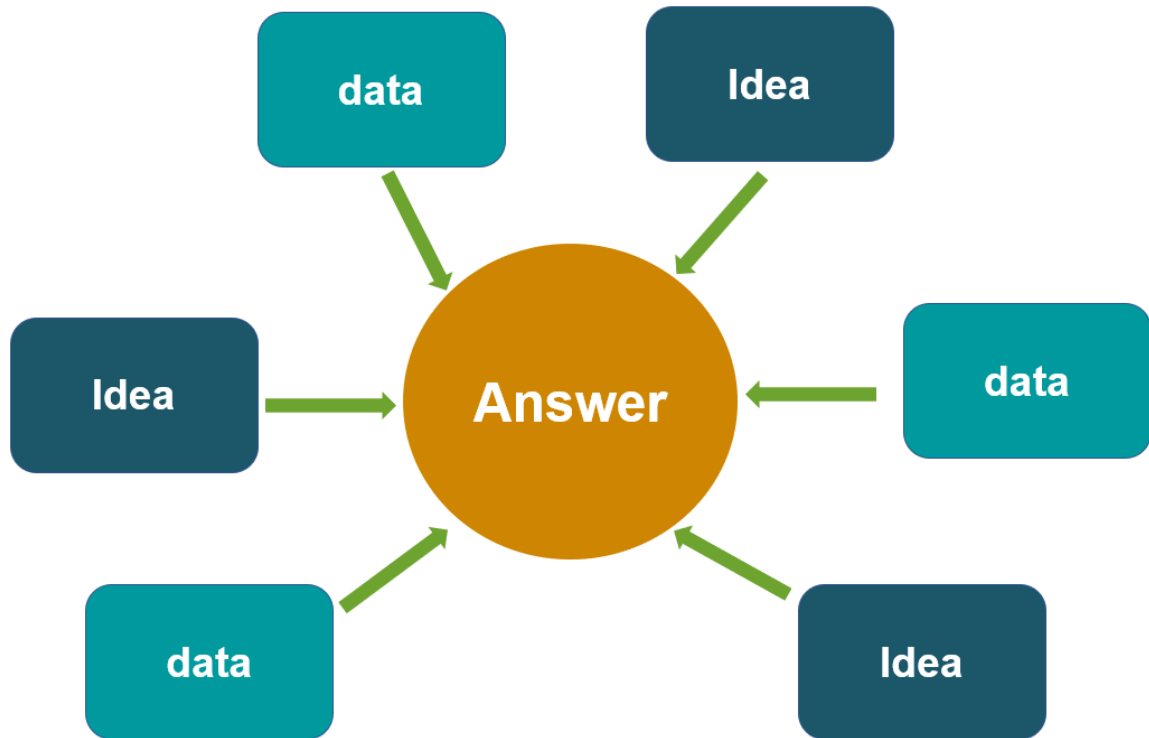
Thinking time is then required after the group have shared their ideas, where group members individually rank the ideas presented. This can be from any score for example 0- not a great idea to 10- let's use it.

Group members will have the opportunity to read their ideas aloud. The highest ranked idea is then selected.

Decision time

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.

➤ Diagram of the Nominal Group Technique

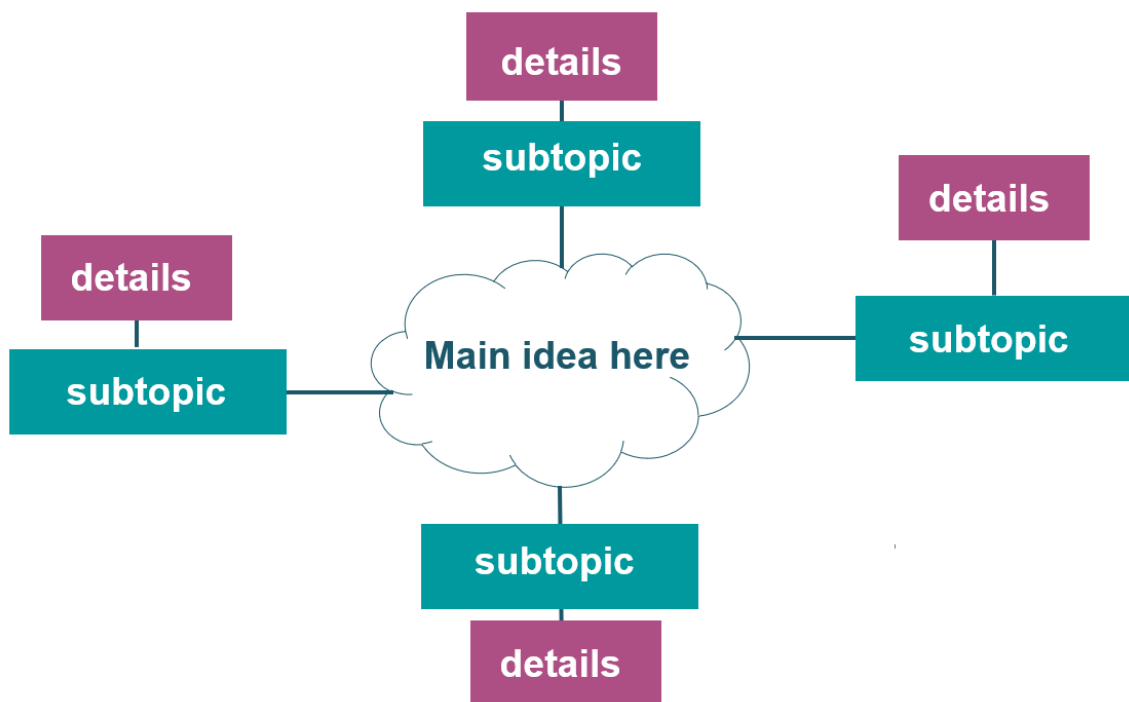


Convergent thinking

Convergent thinking is the opposite to divergent thinking where it is very outcome focused and seeks to provide solutions that have been generated from a set out ideas, data points or objectives. Convergent thinking is very efficient as it works systematically to provide a solution. As value plays a vital role in convergent thinking, this is one of the drivers when finding a solution is to find the highest value idea. Because of its simplistic approach it is highly effective as it avoids risky ideas and has a set of ways of working.

Clustering Ideas

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



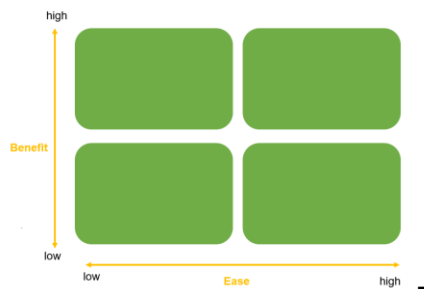
The Ease Benefit Matrix

The Ease Benefit Matrix is a helpful tool that will compliment your problem statement. 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- The Ease benefits Matrix. The matrix can help determine which ideas are the easiest to implement with limited time and resources that also have the highest benefit.

➤ How to use Ease Benefit Matrix

Each idea is placed into one of the quadrants of the matrix, 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:



Easy to implement with low impact;
Easy to implement with high impact;
Hard to implement with low impact;
Hard to implement with high impact.

For your first project you should pursue the ideas in the 'Easy to implement with high impact' i.e. top right quadrant. You can find the Ease Benefit Matrix template on page 10 of this toolkit guide

Helpful tips for divergent thinking

- Keeping a journal is a great 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

- 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

<https://phw.nhs.wales/services-and-teams/improvement-cymru/improvement-cymru-academy/> or email us at improvementcymruacademy@wales.nhs.uk to find out about the improvement courses we offer.

[Framework for Innovation: Design Council's evolved Double Diamond - Design Council](#)

Further reading

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

Nielson.D (2017) *The Divergent and Convergent Thinking Book: Notebook for Creative Thinking*. Laurence King Publish: Denmark.

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

