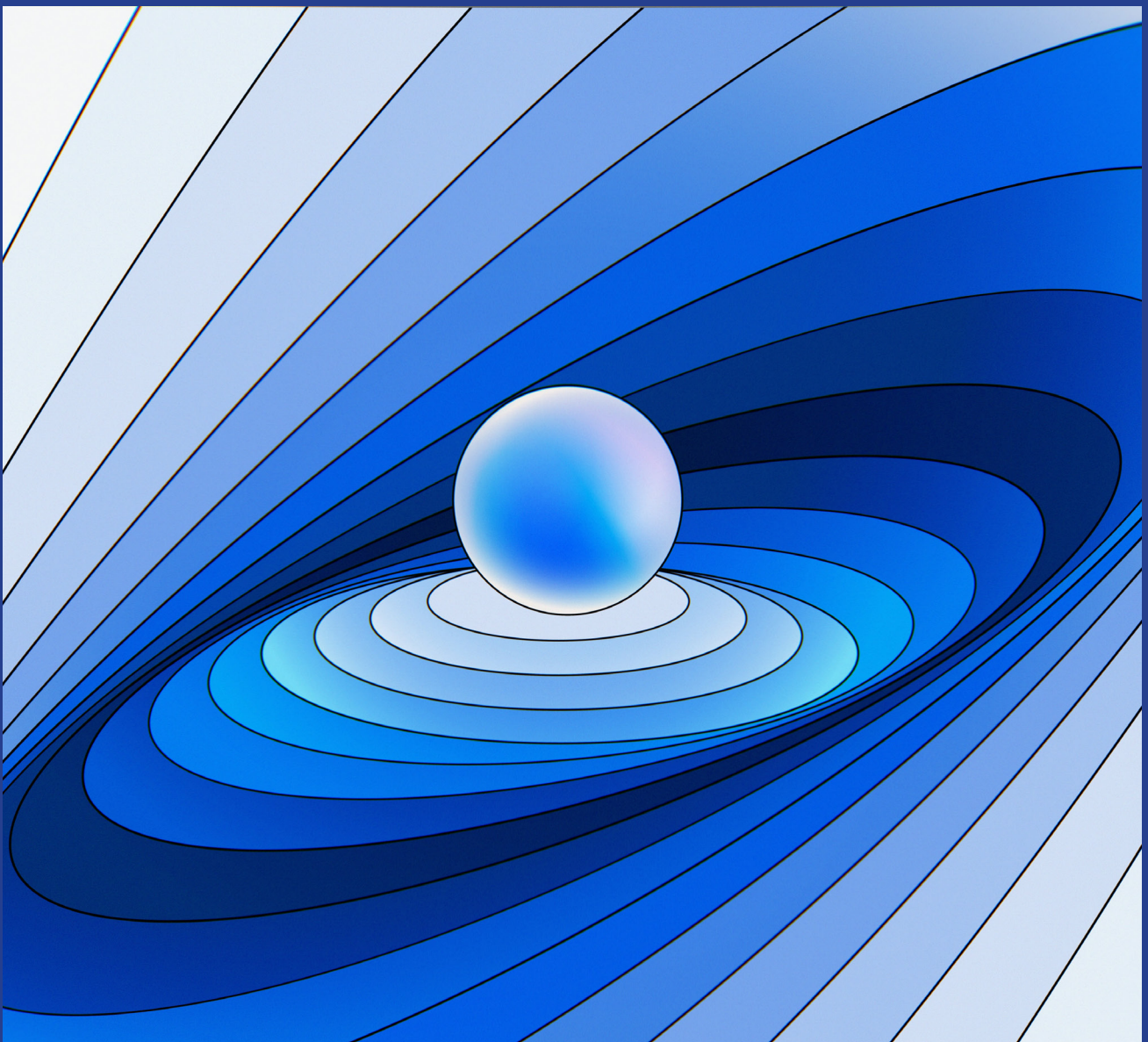# How can researchers utilise design thinking to innovate dissemination and increase engagement?

By Adam Islaam

"We desperately need great communication from our scientists and engineers to change the world… if we don't know about it, or understand it, then the work is not done."

– Melissa Marshall

TEDGlobal, *Talk nerdy to me*.

Contents

How can researchers utilise design thinking to innovate dissemination and increase engagement?

This case study will explore the benefits, challenges and opportunities of design thinking in research dissemination to increase engagement for stakeholders and audiences, potentially transforming research findings into accessible, user-focused, innovative design solutions.

CASE STUDY BY ADAM ISLAAM

A case study observes and analyses phenomena holistically and in their real-world context. It should contribute to the knowledge of a "case" specifically depicting a process, relation, performance, organisation, industry, group or individual (Yin, 2003).

Introduction

Design thinking can be defined as an iterative, human-centred approach to problem-solving that emphasises empathy, ideation, prototyping and testing (IBM, 2018). It is also described as the intersection of desirability, viability and feasibility for users, businesses and technology (Brown, 2009).

Evolving from the 1950s and often used in the field of product design (Cross, 2009), it is an approach that has gained popularity due to its ability to generate innovative and effective user-focused solutions across various sectors including engineering, medicine, business, law, the humanities, sciences, and education (Stanford d.school, n.d.).

There has been growing interest in the application of design thinking in data collection, research dissemination, accessibility and storytelling to develop simple, user-centred, innovative communications for complex global problems (Panke, 2019).

Although interest is increasing, confusion persists on the common definition of design thinking outside of creative practises. How and why this approach can specifically benefit research dissemination, accessibility and communication is not entirely evident within research communities (see page 16).
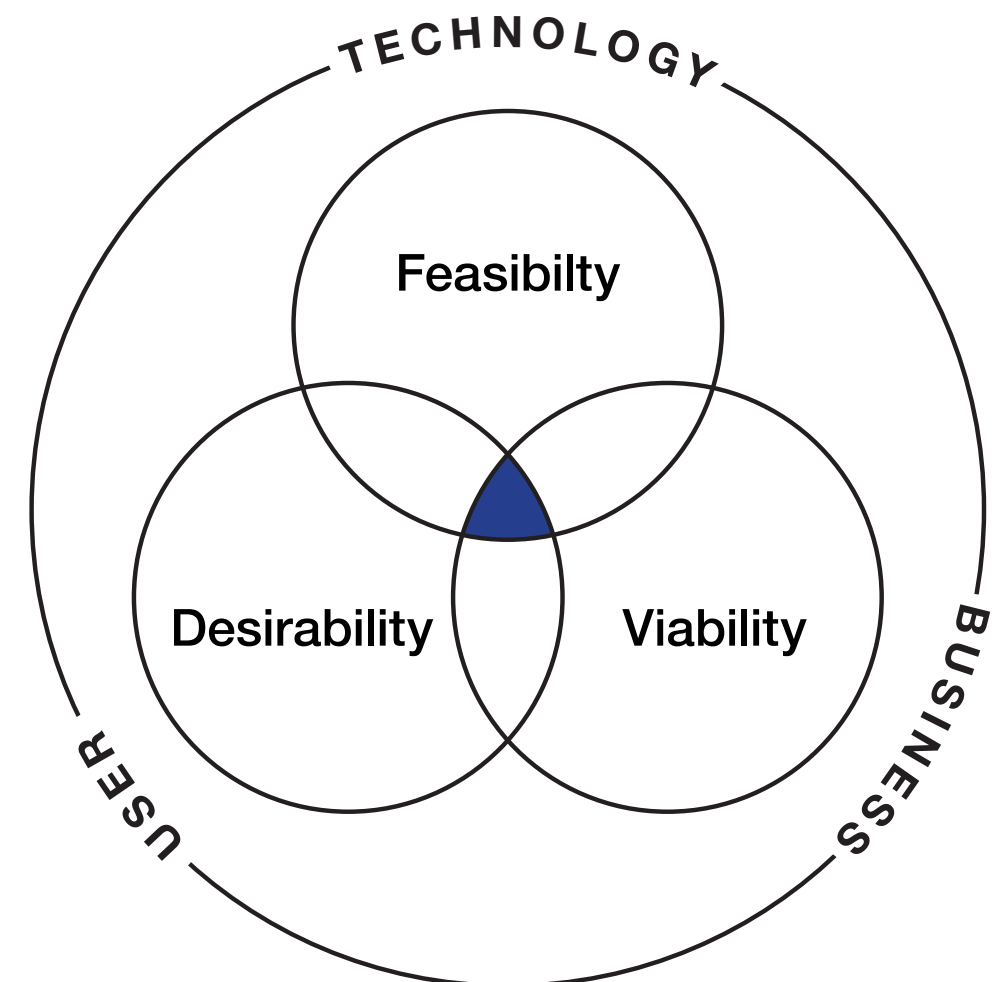

Figure 2: Design Thinking Framework by Tim Brown (Brown, 2009)

TECHNOLOGY

Feasibilty

Desirability   Viability

USER

BUSINESS

Research aim

To design a strategy with recommendations and processes that utilise design thinking within research and academic outputs to increase engagement and create innovative dissemination solutions.

RESEARCH QUESTIONS

• What are the current dissemination processes?
• What are the benefits of utilising design thinking methodology?
• What are some of the challenges and barriers researchers may face?
• How can design thinking methodology innovate research dissemination?
• How can design thinking further accessibility and engagement of research findings?
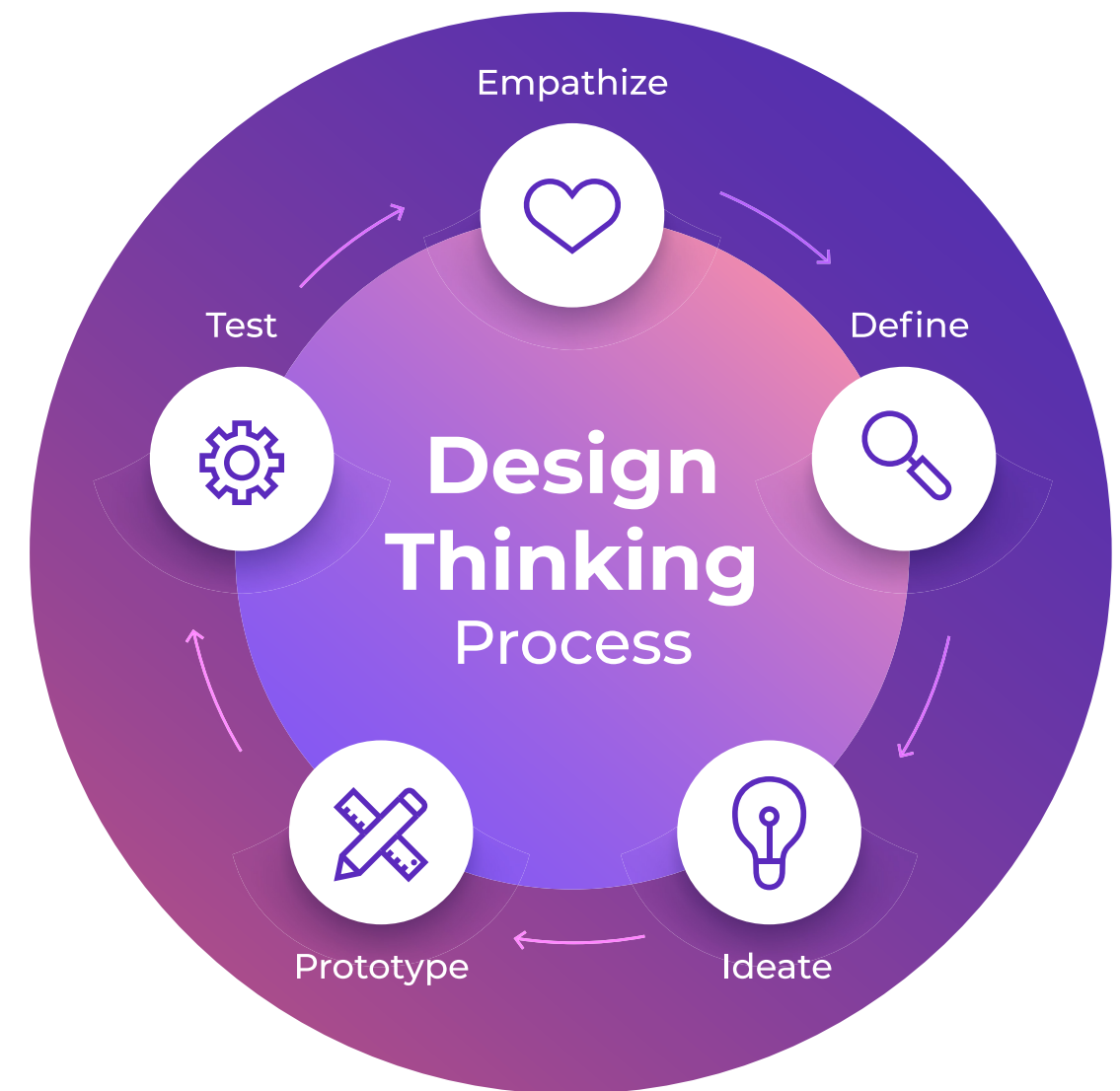
Literature review

ROLE OF DESIGN THINKING IN RESEARCH DISSEMINATION

Design thinking methodologies can help researchers identify and understand the needs of their target audience, whether it is policymakers, practitioners or the general public (Martin et al., 2012). By taking a human-centred approach, researchers can design dissemination strategies that are tailored to the specific needs and preferences of their audience or stakeholder. This can lead to increased engagement, uptake and impact of research findings (Hagger et al., 2020).

Design thinking is an iterative and non-linear process which can benefit researchers to communicate complex research findings in a clear and accessible manner. This is particularly important when disseminating research to non-expert audiences, who may not have a background in the field. Design thinking can help researchers to create visual and interactive tools such as infographics, animations, and videos, that can compellingly convey key messages through storytelling techniques and by involving stakeholders and audiences earlier (Chasanidou et al., 2015; Kornhaber et al., 2017).

Co-creation and collective making can help to build trust and nurture long-term partnerships between researchers and their stakeholders, fostering knowledge sharing and mobilisation through collective making (Baum et al., 2019; Langley et al., 2018) Design thinking can also help researchers to engage in co-creation with their target audience, by involving stakeholders in the research dissemination process, researchers can gain valuable feedback and insights that can inform the design of future research projects. (Greenhalgh et al., 2016).
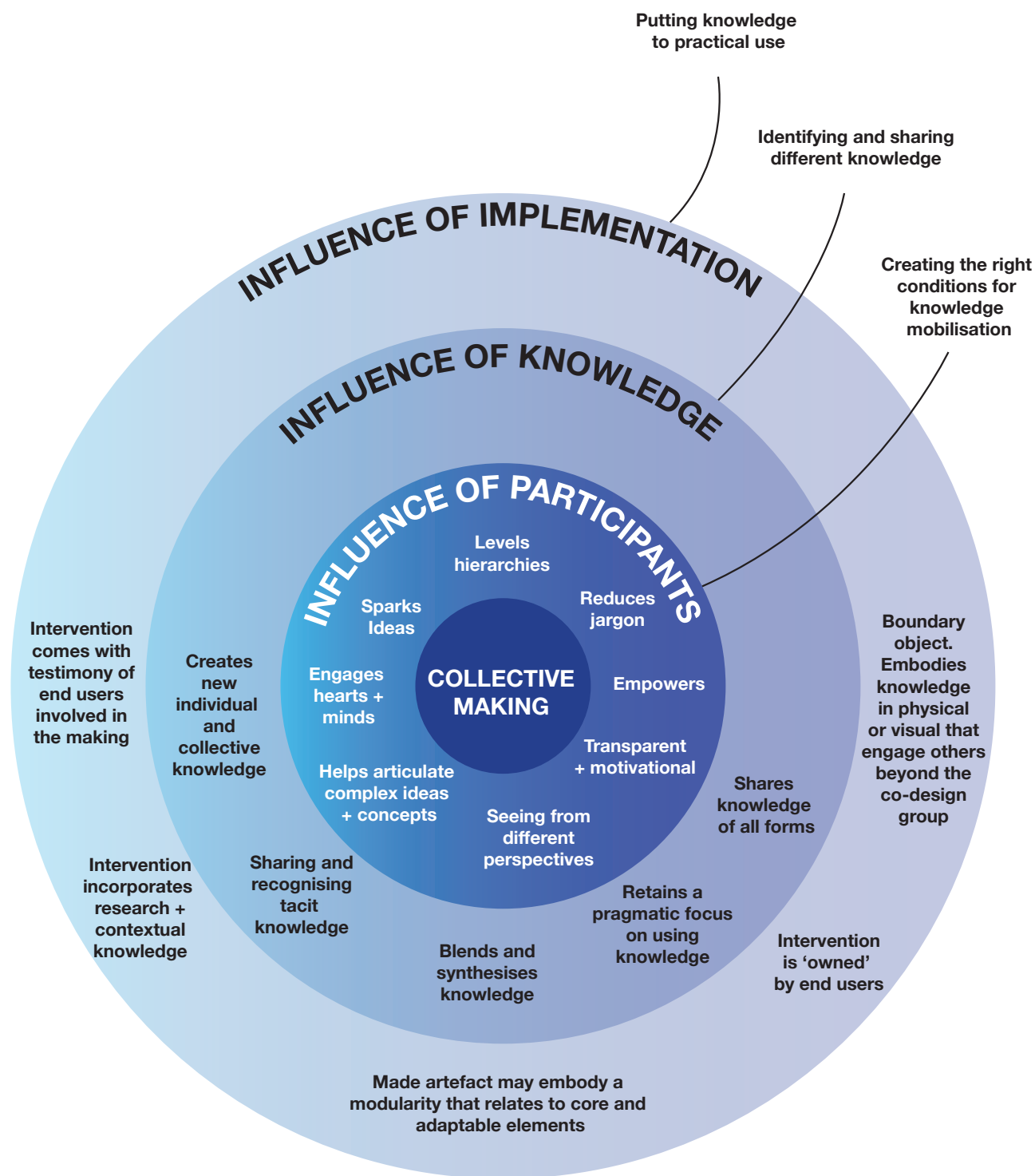

Figure 4: Collective making adapted from Langley, et al. (2018). Adapted by Islaam, A. (2023)

MARKET/SECTOR

In 2022, the global expenditure on research and development was 2.5 trillion USD (adjusted for each countries purchasing power). The United States and China are the largest investing countries however, smaller technology-driven economies like Israel and South Korea allocate a higher percentage of their gross domestic product when compared to other countries, evident when considering the expenditure as a proportion of the overall GDP (Statista, 2022).

Figure 5: Global research and development expenditure in 2022, by Islaam, A. (2023)

AUDIENCE

The output can vary depending on the field of study and the intended audience. In general, academic research findings are published in scholarly journals, and the market for these publications is primarily other researchers in the field (Kelly et al., 2012). Research findings may be of interest to policymakers, industry professionals, or the general public, and there may be separate markets for publications aimed at these audiences as well (Parks et al., 2019).

CHALLENGES

Primarily, design thinking requires a significant investment of time and resource. Researchers may need to engage with design professionals or undergo training in design thinking processes to apply these approaches effectively (Hagger et al., 2020; Langley et al., 2018). Additionally, it may not be appropriate for all types of research dissemination, for example, some research findings may be too technical or complex to be effectively communicated through visual or interactive tools (Martin et al., 2012).

Design thinking may not always align with the values and norms of research. For example, design thinking emphasises speed and iteration, which may conflict with the measured and deliberate pace of research (Martin et al., 2012). Additionally, design thinking is often associated with a focus on practical outcomes, which may not always align with the broader goals of academic examination, such as advancing knowledge and understanding (Greenhalgh et al., 2016).

COMPETITION

Research dissemination is competitive, a study by Samara Klar (2020) found that researchers in the political sciences and communications use a variety of tactics to disseminate their research, including publishing in high-impact journals, attending conferences, and using social media platforms.

Another study by Hadas Shema (2012) found that researchers who actively promote their work on social media tend to receive more citations than those who do not. The design of these outputs is changing rapidly alongside technological advances (Yee, 2013). Researchers are required to be proactive in promoting their work and using a variety of strategies to increase its visibility and impact.

ACCESSIBILITY

Increasing the dissemination, visibility and impact of research usually involves an open-access strategy that is free and immediate such as journal articles or books (Springer Nature, n.d.).

Accessibility not only concerns open access but is also defined as a human right for all society members to understand, participate and use. This human right ensures "the right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupational integration and participation in the life of the community" European Union Agency for Fundamental Rights, 2015. Art 26.

Though seen as a fundamental human right, research outputs are often not disability inclusive. The requirements vary widely so it is also worth noting that not all outputs can meet all standards covering every disability (Honisch, S. et al. 2022).

INITIAL CONCLUSION

In conclusion, design thinking has several potential benefits for research dissemination, including its ability to identify and understand the needs of target audiences, communicate complex research findings in a clear and accessible manner, and engage in co-creation with stakeholders. However, design thinking also poses several challenges, including the need for significant time and resource investment, potential conflicts with academic norms and values, and limited applicability to certain types of research dissemination.

My primary research will explore ways to address these challenges and further explore the process to utilise design thinking in research dissemination.

Figure 6: Photo by DeepMind on Unsplash

Research methodology

I will be using qualitative data methodologies which with allow me to examine and analyse phenomena based on experiences, opinions and concepts to gain a deeper understanding of my chosen population and their experience of design thinking (Flick, 2014). Multiple sources of evidence and triangulation of findings from my interviews, survey and focus group will strengthen the quality and overall findings in the final strategy (Yin, 2003).

PRIMARY

Role of design thinking	Market/sector	Audience
Martin et al., 2012; Hagger et al., 2020; Brown, 2009; Chasanidou et al., 2015; Kornhaber et al., 2017; Greenhalgh et al., 2016	Statista, 2022	Kelly et al., 2012; Parks et al., 2019

Challenges	Competition	Accessibility
Hagger et al., 2020; Langley et al., 2018; Martin et al., 2012; Greenhalgh et al., 2016	Klar, 2020; Shema, 2012; Yee, 2013	Springer Nature, n.d.; EUAFR, 2015; Honisch, S. et al. 2022

INITIAL CONCLUSION

Methodology		Considerations
Flick, 2014; Yin, 2003		Fiske & Taylor, 2013; Galdas, 2017; Miracle, 2016; GDPR, n.d.

SECONDARY

Survey	Interviews	Focus group
Schramm, 1971; SurveyMonkey, 2018	Russel & Gregory, 2003; Nowell et al., 2017;	Hunter & Brewer, 2015; LucidChart, 2019; Yin, 2003; Damelio, 2011; Design Council, 2019

CONCLUSION

Strategy

Research considerations

BIAS

Confirmation bias is a well-known research bias in which researchers selectively choose, interpret, or analyse data in a way that confirms their pre-existing beliefs or hypotheses while ignoring or downplaying conflicting evidence (Fiske & Taylor, 2013). The rigour, validity and trustworthiness of qualitative findings are paramount (Galdas, 2017).

I recognise my network for primary research will predominantly consist of findings from 2 institutes where I have had professional affiliations in the past. This may result in biased findings as participants know me, my work and work in similar fields to one another or within the same institution.

ETHICAL ISSUES

I have applied The Triple Crown of Research Ethics (Miracle, 2016) during my research:

1. **respect for persons**
   a. autonomy and the right to decide
   b. allowances and safe conditions for vulnerable participants
2. **beneficence**
   a. do no harm
   b. increase benefits and decrease adverse events
3. **justice**
   a. fairness and equal treatment
   b. create a sense of trust

Participants have voluntarily partaken in the following research and given explicit consent for their answers to contribute to my findings. All identifying details such as their name, institutional affiliation and contact details are withheld to align with GDPR (GDPR, n.d.). It is also worth noting no singular participant, organisation or institute's contribution in this case study can be inferred as support or agreement with the conclusions. This case study will also be shared with all participants once finalised for transparency and knowledge sharing.

Primary research

SURVEY

A survey was conducted to check that certain information correlates when described by a group of people who represent a larger population. The goal of analysing the information is to find connections between different groups of people in the population at a specific moment in time (Schramm, 1971). Survey results can be found in Appendix A.

Survey participants (17 total):
Researcher: 47% | Communicator: 35% | Designer: 6% | Support: 2% | Other: 6%

Main takeaways:

- 88% have **little to no knowledge of the term 'design thinking'** yet 93% of respondents are interested in learning how to utilise it
- **Ideation and empathy mapping** to understand/connect with stakeholders and audiences is seen as the most significant design thinking principle
- Participants believe that design thinking will primarily **affect their stakeholders and their perceptions**
- The **creativity, clarity and validity** of design is seen as highly important (Score of 9.14/10)
- **Budget, time and the clear translation** of findings are the main concerns when applying design thinking and visual communications
- The **accessibility of outputs** is seen as highly important but infrequently put into practice. 47% of participants mentioned colourblindness as their main concern to address accessibility
- The success of dissemination is primarily measured through **metrics, social media engagement and peer feedback**

In conclusion, participants feel design thinking can improve relationships and **deepen the understanding** of stakeholders and their chosen audience through ideation and empathy mapping. The design and accessibility of their research outputs are highly important but there is a distinct lack of budget, resources, time and knowledge/training on how to produce accessible, effective dissemination materials.

INTERVIEWS

Semi-structured interviews have been conducted with researchers, communication specialists and designers to gain a deeper understanding of individual opinions and experiences (Russel & Gregory, 2003). The results have been categorised into inductive thematic analysis using general statements (yellow) pain points (red), gain points (blue) and drivers (green) which can be found in Appendix B. This will determine the main themes and patterns to form relationships from my interviews (Nowell et al., 2017).

Interview participants:
Researcher: 2 | Communicator: 2 | Designer: 2

Thematic content analysis:

Figure 8: Thematic content analysis by Islaam, A (2023)

Heatmap results highlighting the most frequent interview feedback by category:

GENERAL:

To make scientific findings accessible and easy to understand	Involving diverse stakeholders in co-creation offers multiple viewpoints	Creativity and collaboration can enhance research findings

PAIN POINTS:

Knowledge of design and design thinking frameworks is limited	Balancing aesthetics and research findings can be difficult	Finding the resources and/or budget is challenging

GAIN POINTS

Bridging the gap between research and audiences	Collaborating with designer thinkers and stakeholders	Innovation and new technologies to push boundaries

DRIVERS

Experimentation, creativity and novel approaches	Increase in circulation, impact and recognition	Making accessibility a requirement is fundamental

In conclusion many of the answers I received confirm the research done during my literature review. All groups felt design thinking should be introduced earlier in the process, accessibility is seen as a fundamental human right and design thinking methodologies can empower audiences through creativity, strengthen engagement through co-creation and innovate the way research is disseminated. Budget, time, expertise and finding the correct resources are pain points that were mentioned frequently.

→

FOCUS GROUP

The explorative and experimentative nature of focus groups can offer insights into how and why participants behave and think in certain ways. Focus group disadvantages can include lesser control of the process and participants not speaking as freely as individual interviews. Creating a safe space is important for participants to feel they can speak openly (Hunter & Brewer, 2015).

Focus group participants:
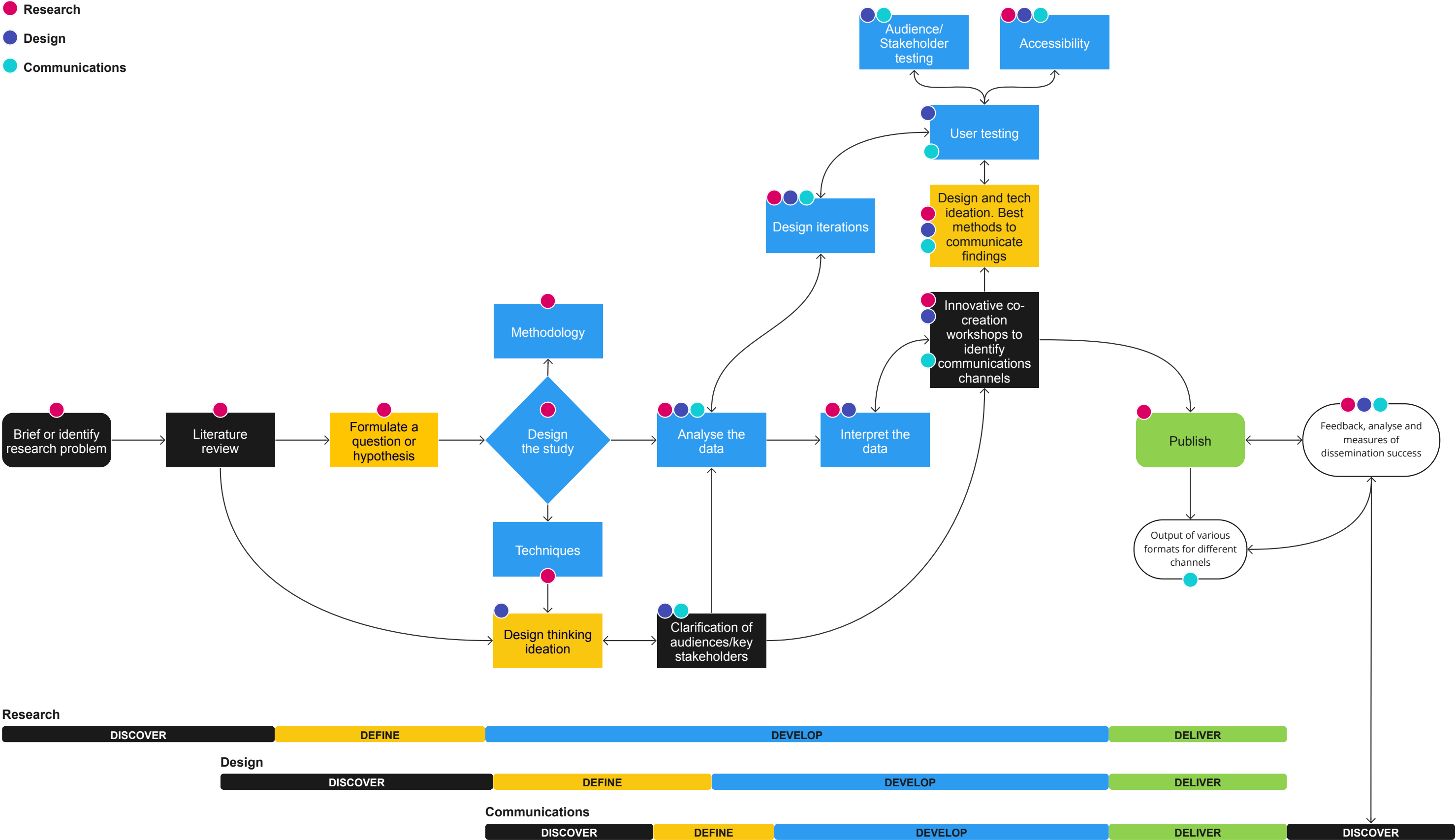Researcher: 1 | Communicator: 1 | Designer: 1 | Moderator: 1

My focus group had 2 main objectives:

1. to create a flowchart of each expertise to gain insights into the gain and pain points of individual processes, see Appendix C (LucidChart, 2019)
2. to co-create a combined process through the triangulation of each flowchart (Yin, 2003)

By mapping each flowchart my participants were able to explore the 'as is' generalised activities employed to produce a single output including swimlanes which depict distinguishable responsibilities of each profession when co-creating (Damelio, 2011).

COMBINED FLOWCHART →

Combined flowchart

- 🔴 Research
- 🟣 Design
- 🔵 Communications

Research

| DISCOVER | DEFINE | DEVELOP | DELIVER |

Design

| DISCOVER | DEFINE | DEVELOP | DELIVER |

Communications

| DISCOVER | DEFINE | DEVELOP | DELIVER | DISCOVER |

Figure 9: Double Diamond Framework by Design Council (2019)
and combined flowchart adapted by Islaam, A (2023)

During the creation of a combined flowchart, some insights became evident:

- The researcher was open but sceptical of **how early design thinking activities should begin**
- Design was to be included **alongside the interpretation of data** to assist researchers with design thinking methodologies, ideation and to **act as a bridge between communications**
- A communications expert should be involved to help define **audiences, stakeholders, and storytelling techniques** whilst outlining the appropriate channels before or very close to publishing findings
- The process is **collaborative and iterative** once interpreting data begins, including design thinking before this was seen as hindering the research process
- **Accessibility** did not appear in earlier flowcharts but was deemed a necessity for the future
- The Design Council's Double Diamond Framework for Innovation (Design Council, 2019) was interpolated along the bottom to **define the swimlanes**

Conclusion

The survey, interview, and focus group results provide valuable insights into the importance of accessibility, collaboration and creativity in research dissemination and the need for training and resources to effectively apply design thinking principles.

Looking to the future, design thinking will continue to play a critical role in research and innovation, with an increasing focus on accessibility and inclusivity. As organizations and researchers strive to engage diverse stakeholders and audiences, the use of design thinking methodologies will become more widespread, allowing for deeper understanding and better communication of research findings.

However, there will also be challenges to overcome including limited resources, time constraints, and a lack of knowledge and training in design thinking principles. To address these challenges, it will be important to invest in education and training programs for researchers and professionals, as well as to allocate sufficient resources to support the application of accessibility, design and design thinking methodologies for research dissemination.

Figure 6: Photo by DeepMind on Unsplash

Strategy: Utilising design thinking to innovate dissemination and increase engagement

By Adam Islaam

Contents

Objective

The objective of this strategy is to pinpoint the essential elements that facilitate effective dissemination of research, including identifying gain points, pain points, and drivers. Recommendations are presented in this document based on my primary and secondary research, highlighting the teams, processes, and design thinking methodologies that are recommended for successful research dissemination. By adopting these recommendations, researchers can improve the impact of their work by utilising effective dissemination strategies and ensuring that their research is accessible and engaging to a wider audience.
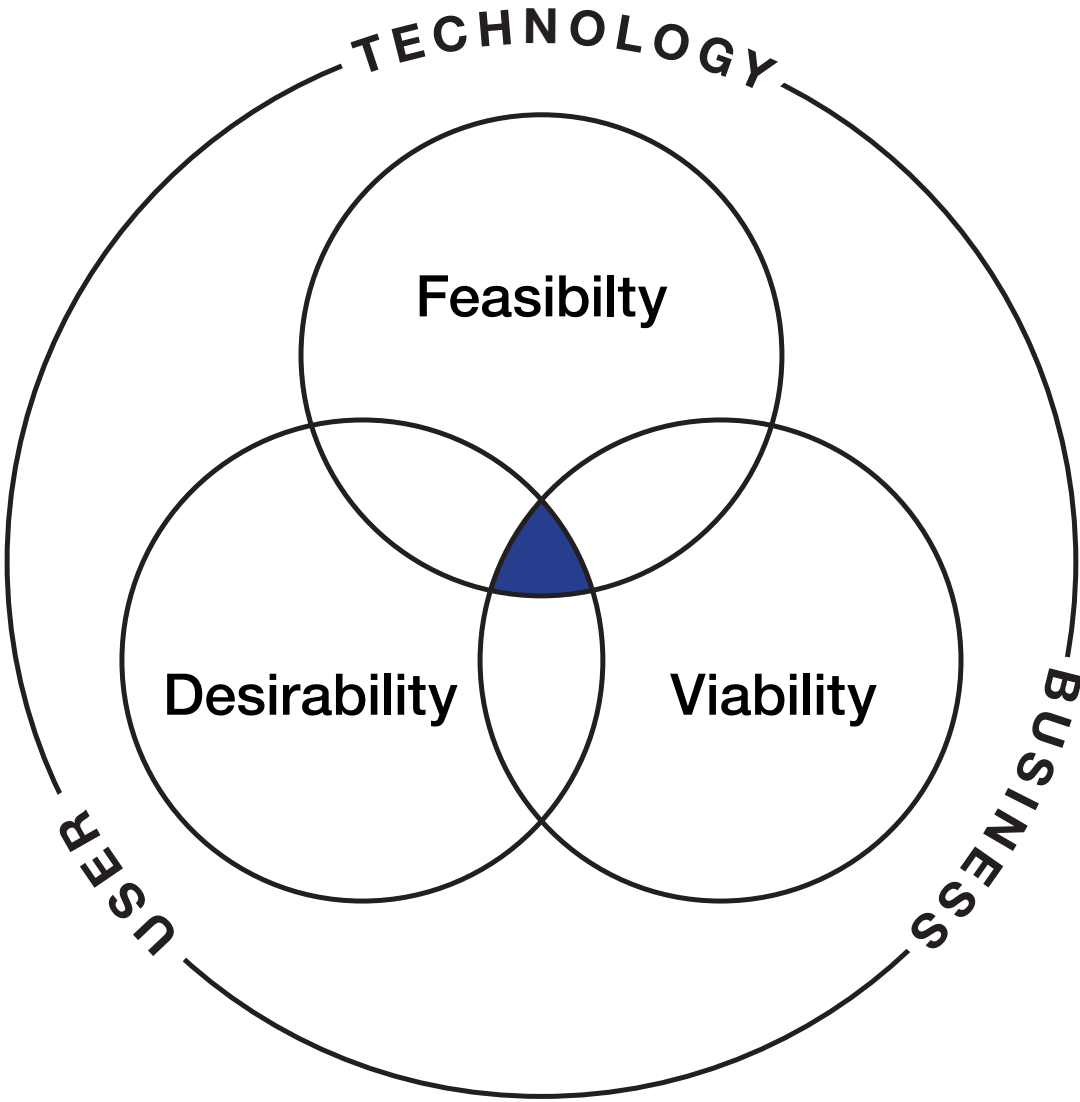

Figure 2: Design Thinking Framework by Tim Brown (Brown, 2009)

Discovery

GENERAL:

To make scientific findings accessible and easy to understand	Involving diverse stakeholders in co-creation offers multiple viewpoints	Creativity and collaboration can enhance research findings

PAIN POINTS:

Knowledge of design and design thinking frameworks is limited	Balancing aesthetics and research findings can be difficult	Finding the resources and/or budget is challenging

GAIN POINTS

Bridging the gap between research and audiences	Collaborating with designer thinkers and stakeholders	Innovation and new technologies to push boundaries

DRIVERS

Experimentation, creativity and novel approaches	Increase in circulation, impact and recognition	Making accessibility a requirement is fundamental

The main findings were consistent with prior research, indicating agreement on the importance of incorporating design thinking earlier in the research process, recognising accessibility as a fundamental right and utilising design thinking to foster creativity, engagement, and innovation in research dissemination. However, participants frequently identified budgetary, temporal and expertise limitations as significant barriers to effectively implementing design thinking in research.

The dream team

Involving stakeholders in co-creation brings a human-centred approach that can lead to increased engagement, uptake and impact of research findings.

Research findings are crucial to social, financial and environmental wellbeing. Communicating complex research findings in an accessible and understandable manner is fundamental.
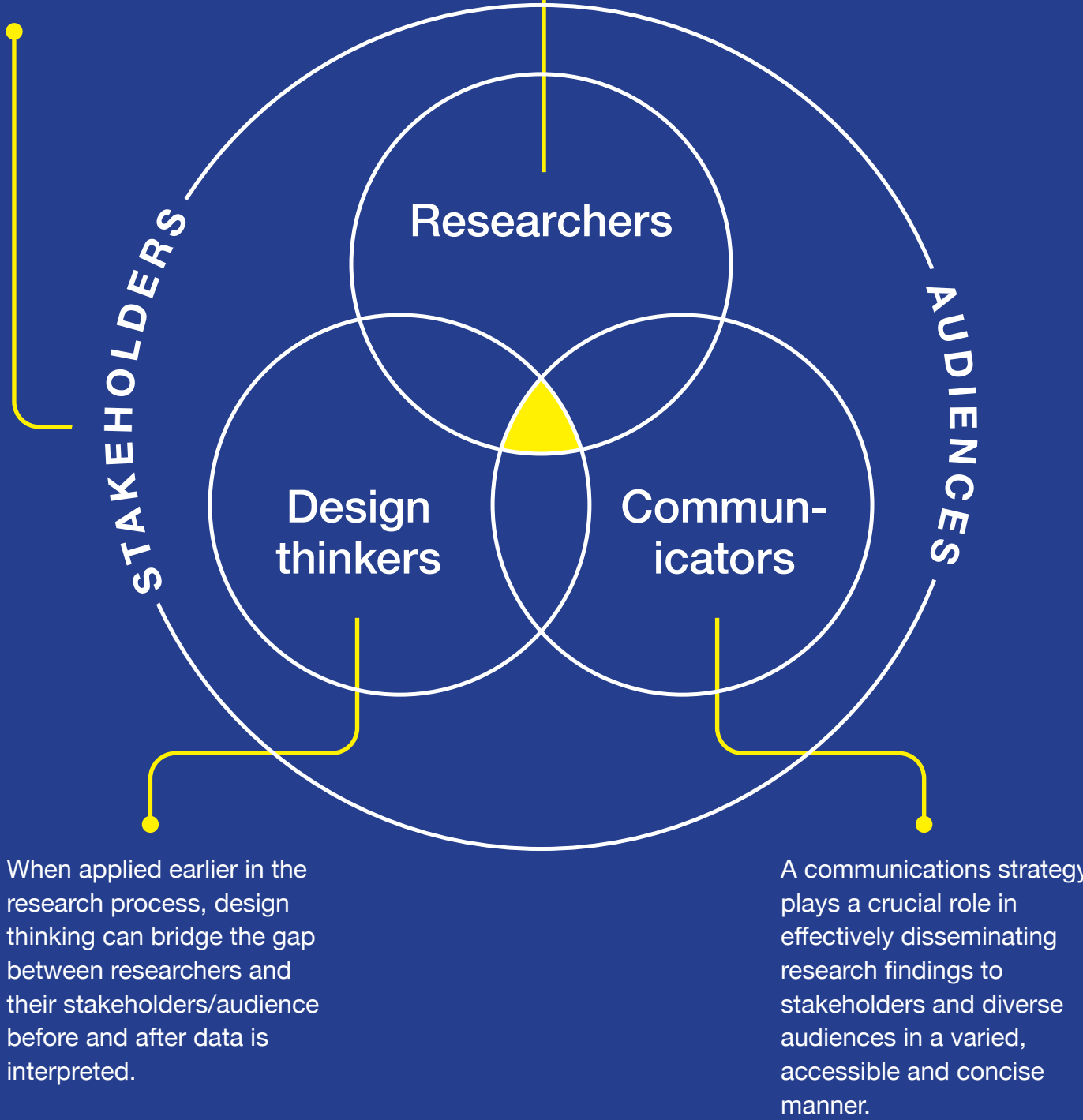
STAKEHOLDERS

AUDIENCES

Researchers

Design thinkers

Commun-icators

When applied earlier in the research process, design thinking can bridge the gap between researchers and their stakeholders/audience before and after data is interpreted.

A communications strategy plays a crucial role in effectively disseminating research findings to stakeholders and diverse audiences in a varied, accessible and concise manner.

Figure 3: Design Thinking Framework by Tim Brown (Brown, 2009) adapted by Islaam, A (2023)

Recommendations

FLOWCHART

Understand your 'as is' process and identify where new techniques can fit in to innovate research and dissemination.

EMPATHY MAPPING

Get a sense of who your stakeholders are and what they require from your findings.

USER PERSONAS

Understand what your audience thinks, feels, does and says when they encounter your work. Why should they care and how can we encourage them to act?

TECHNOLOGY

Take advantage of new technologies such as interactive tools, gamification and augmented reality. Researchers who engage with social media recieve more citations than those who do not (Shema et al., 2012).

ACCESSIBILITY TESTING

Findings should be accessible to as many people as possible. Technologies that can assist in the accessibilty of research findings and dissemination include but are not limited to: keyboard navigation, screen readers, low vision features, voice input, tactile export, colour contrast, sonification, cognitive accessibility and internationalisation (High Charts, n.d.).

IDEATION AND CO-CREATION

Collaboration with experts, stakeholders and audiences can build trust and nurture long-term partnerships (Baum et al., 2019). It can also increase engagement when using stroytelling techniques to communicate findings. The Influence of Participants being a key structure to follow (Langley, et al. 2018)
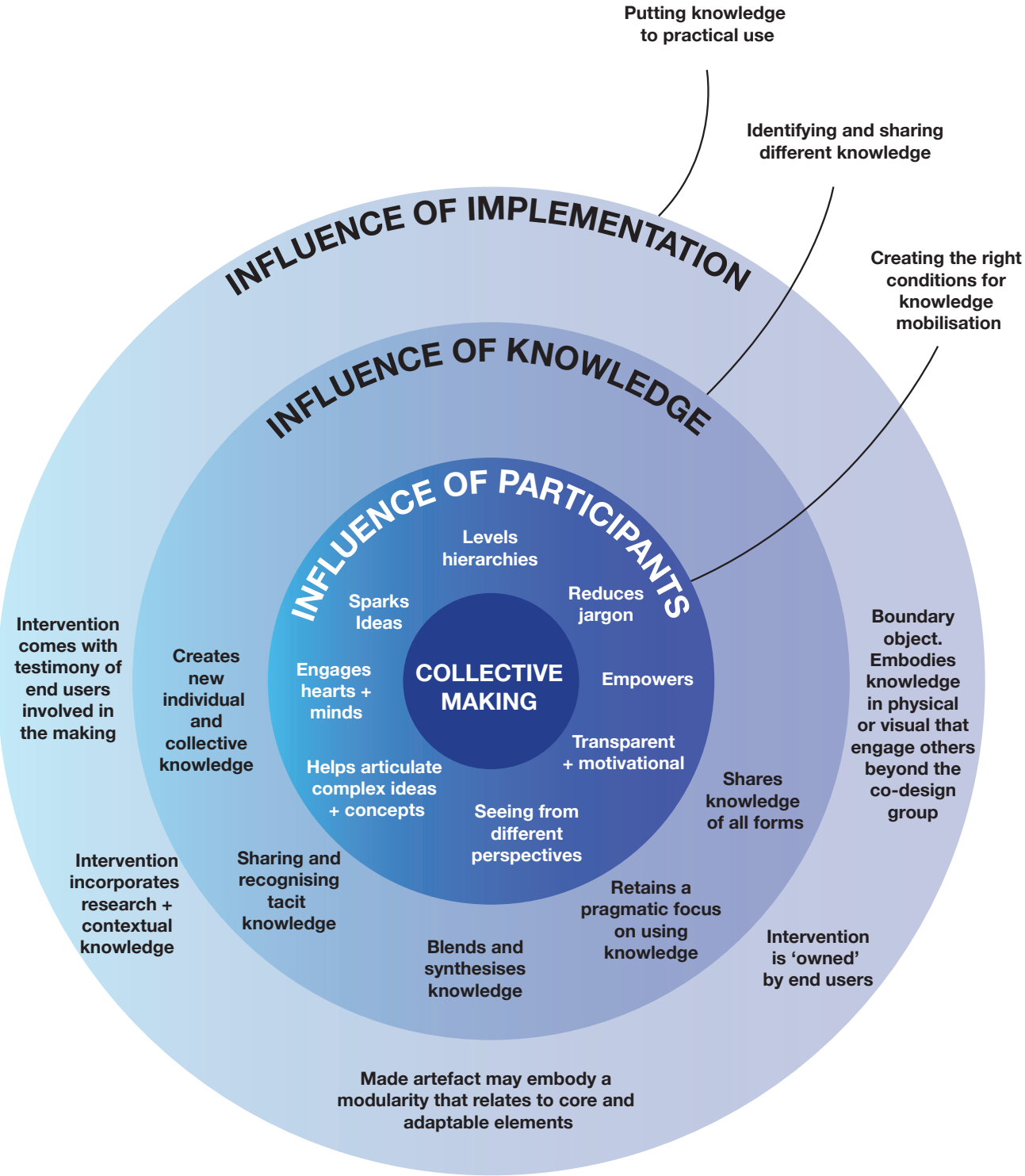

Figure 4: Collective making adapted from Langley, et al. (2018). Adapted by Islaam, A. (2023)

Flowchart

Example flowchart utilising the 3 key implementations from Langley (2018), my combined flow chart and the Design Council's Double Diamond Framework to determine swimlanes which depict distinguishable responsibilities of each profession when co-creating (Damelio, 2011).

Figure 5: Double Diamond by Design Council (2019) + Collective making by Langley, et al. (2018) + combined flowchart adapted by Islaam, A (2023)
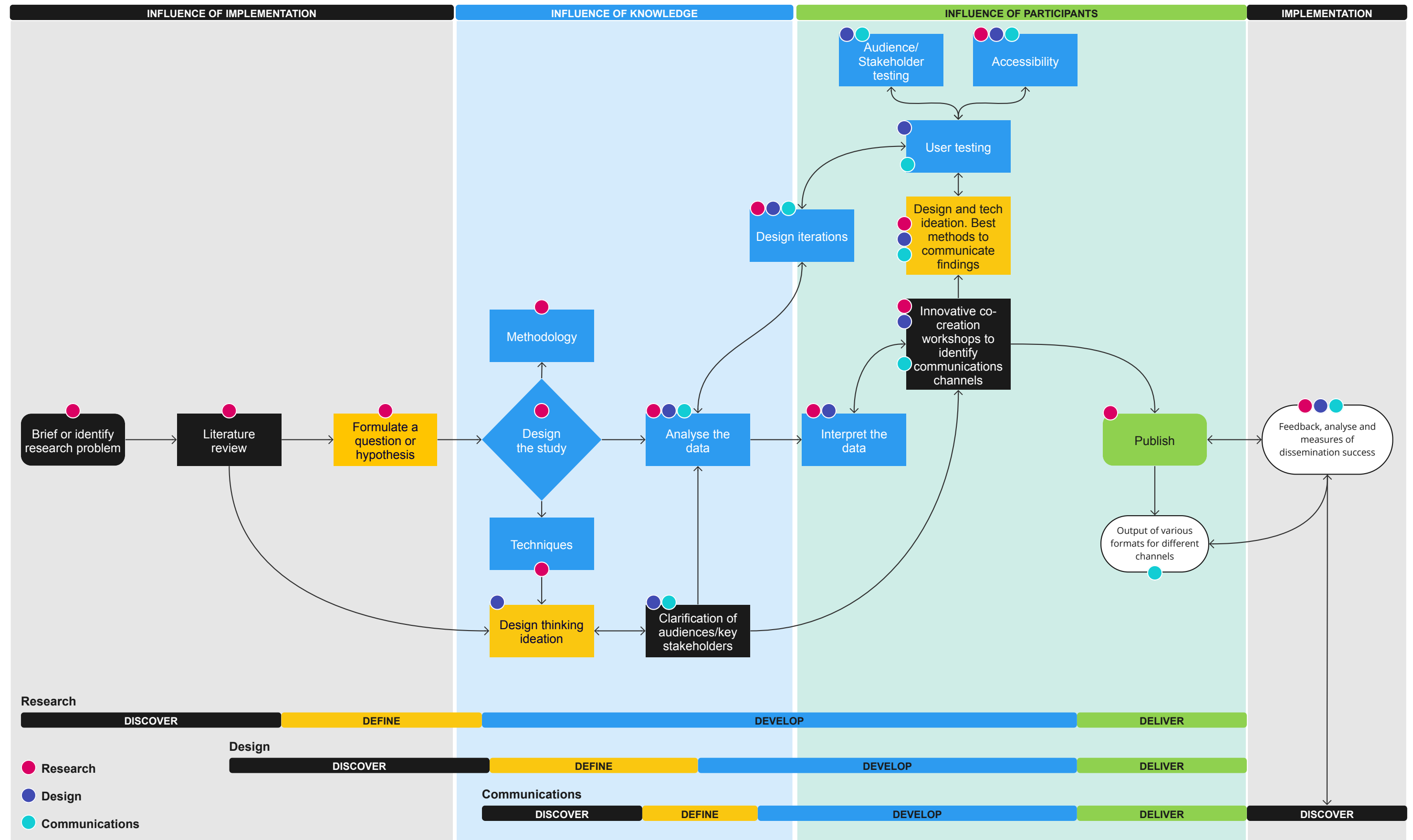
Conclusion

In conclusion, design thinking will continue to be crucial for research and innovation, particularly in promoting accessibility and inclusivity. Despite the challenges of limited resources, time constraints, and lack of training, investing in education and resources can help address these barriers. Overall, the potential benefits of design thinking in research dissemination require ongoing investment and collaboration to make it accessible to all.

Figure 6: Photo by DeepMind on Unsplash

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Cover: Unsplash (n.d.). Photo by DeepMind on Unsplash. [online] unsplash.com. Available at: https://unsplash.com/photos/mWztzk66I7Q [Accessed 21 April 2023]

Figure 2: Design Thinking Framework by Tim Brown (Brown, 2009)

Figure 3: Design Thinking Framework by Tim Brown (Brown, 2009) adapted by Islaam, A (2023)

Figure 4: Collective making adapted from Langley, et al. (2018). Adapted by Islaam, A. (2023)

Figure 5: Design Council (2019). Framework for Innovation: Design Council's evolved Double Diamond. [online] design council. Available at: https://www.designcouncil.org.uk/our-work/skills-learning/tools-frameworks/framework-for-innovation-design-councils-evolved-double-diamond/ [Accessed 23 April 2023] and combined flowchart by Islaam, A (2023)

Figure 6: Unsplash (n.d.). Photo by DeepMind on Unsplash. [online] unsplash.com. Available at: https://unsplash.com/photos/mbq0qL3ynMs [Accessed 21 April 2023]

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Cover: Unsplash (n.d.). *Photo by DeepMind on Unsplash*. [online] unsplash.com. Available at: https://unsplash.com/photos/kUmcSBJcFPg [Accessed 20 April 2023]

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Figure 2: Design Thinking Framework by Tim Brown (Brown, 2009)

Figure 3: Vecteezy. (n.d.). *Download Design Thinking Process for free*. [online] Available at: https://www.vecteezy.com/vector-art/2161947-design-thinking-process [Accessed 22 April 2023]

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Figure 5: Global research and development expenditure in 2022. LLC, T.G. | S.C. (n.d.). *Vector Map of World - Blue | FreeVectorMaps.com*. [online] freevectormaps.com. Available at: https://freevectormaps.com/world-maps/WRLD-EPS-02-4001 [Accessed 22 April 2023]. Adapted by Islaam, A. (2023)

Figure 6: Unsplash (n.d.). *Photo by DeepMind on Unsplash*. [online] unsplash.com. Available at: https://unsplash.com/photos/mbq0qL3ynMs [Accessed 21 April 2023]

Figure 7: Research methodologies by Islaam, A (2023)

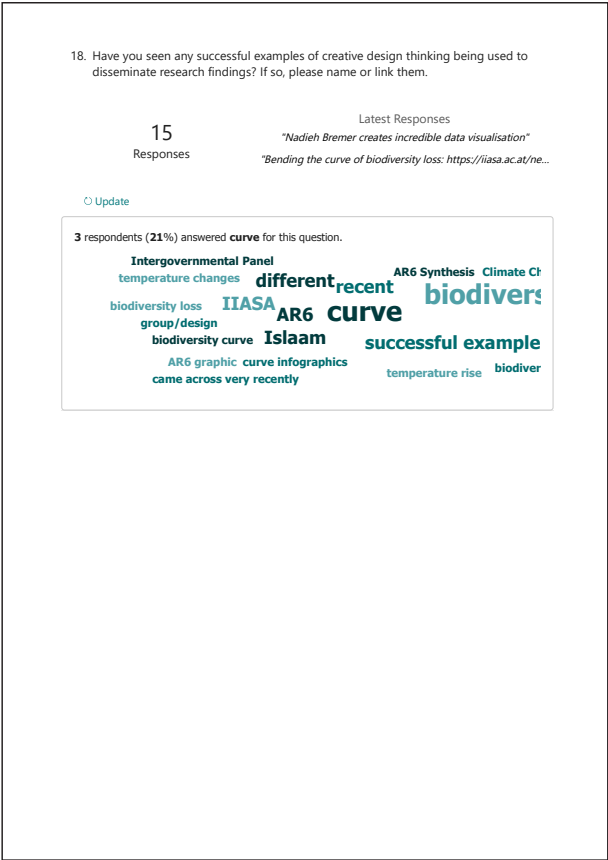Figure 8: Thematic content analysis by Islaam, A (2023)

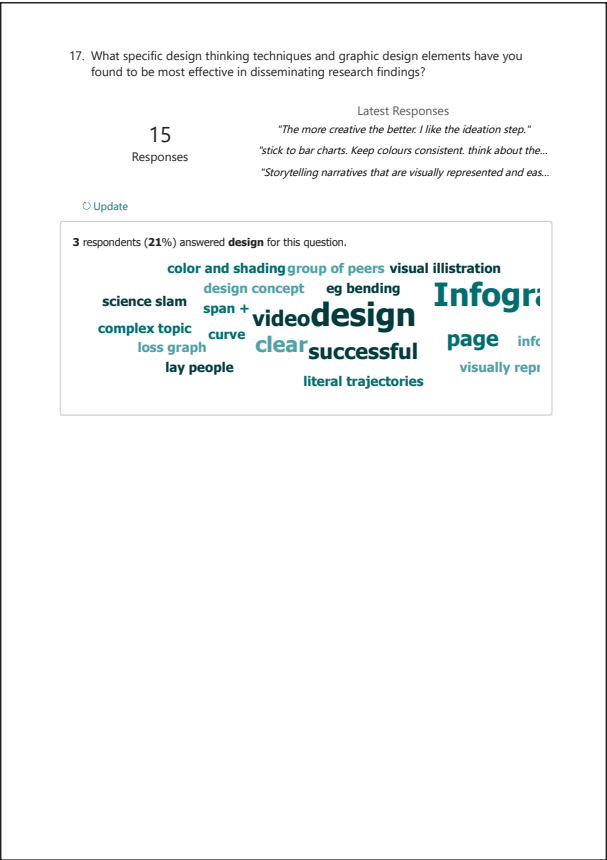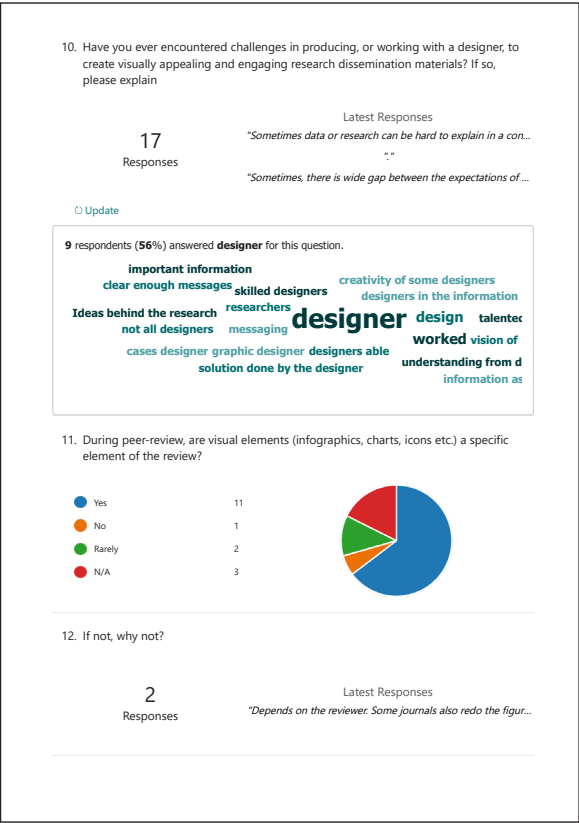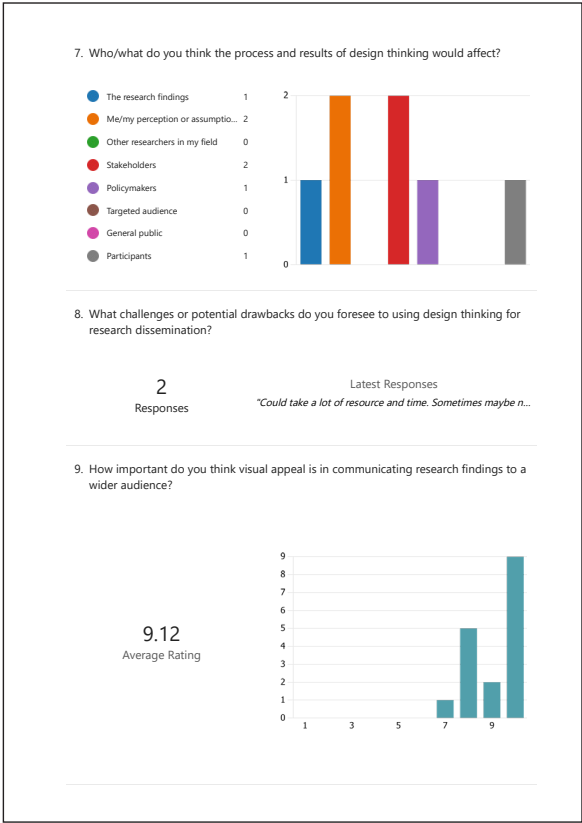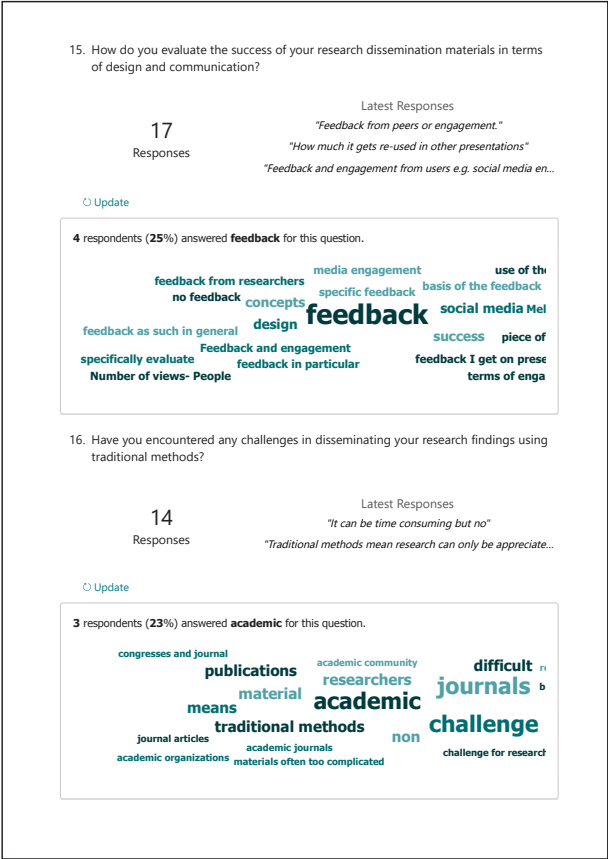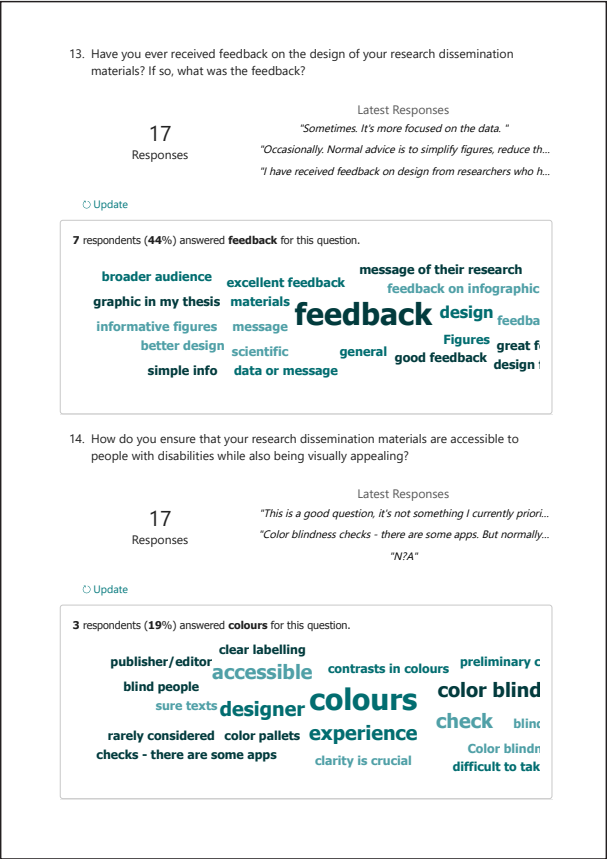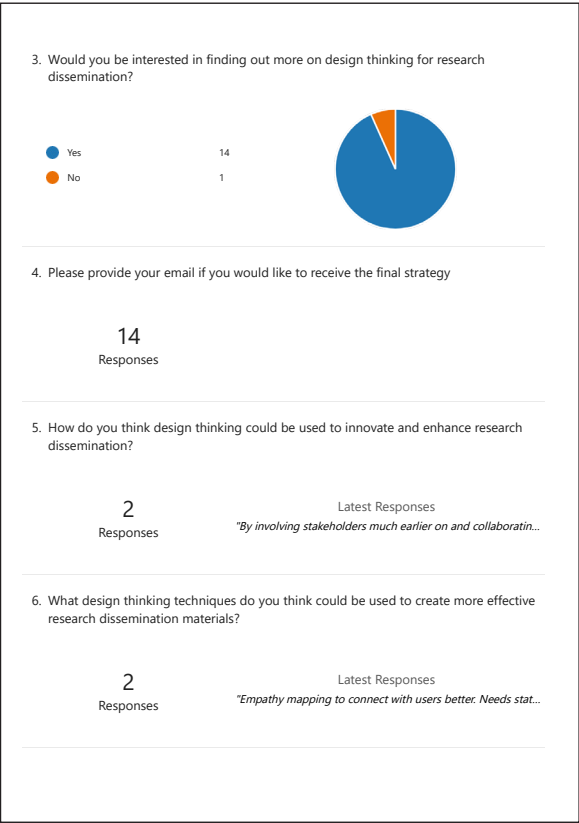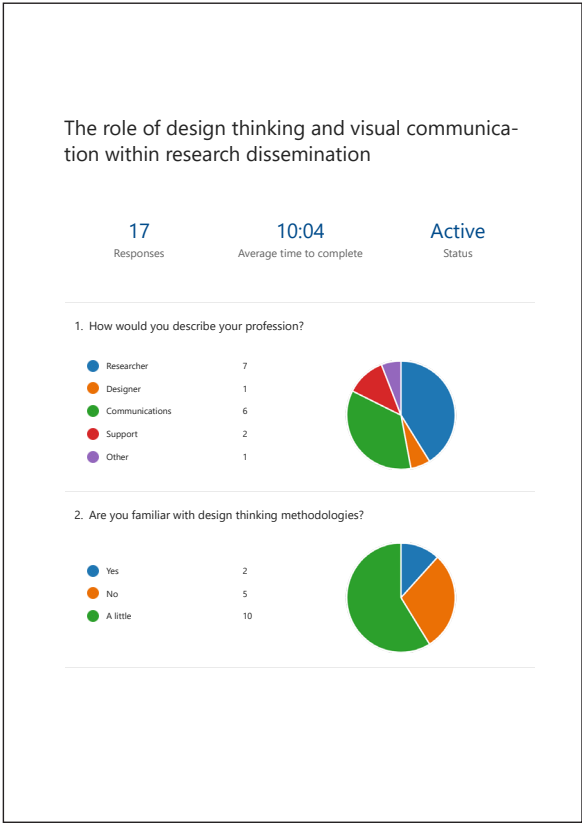Figure 9: Double Diamond Framework by Design Council (2019) and combined flowchart adapted by Islaam, A (2023)

Figure 10: Unsplash (n.d.). *Photo by DeepMind on Unsplash*. [online] unsplash.com. Available at: https://unsplash.com/photos/kUmcSBJcFPg [Accessed 20 April 2023]

Appendix

Aim: To gain a deeper understanding of the opinions and experiences of the population. There were some surprising insights such as 88% having little knowledge of the term 'design thinking'.

The role of design thinking and visual communication within research dissemination

17	10:04	Active
Responses	Average time to complete	Status

1. How would you describe your profession?

- Researcher — 7
- Designer — 1
- Communications — 6
- Support — 2
- Other — 1

2. Are you familiar with design thinking methodologies?

- Yes — 2
- No — 5
- A little — 10

3. Would you be interested in finding out more on design thinking for research dissemination?

- Yes — 14
- No — 1

4. Please provide your email if you would like to receive the final strategy

14 Responses

5. How do you think design thinking could be used to innovate and enhance research dissemination?

2 Responses

Latest Responses

"By involving stakeholders much earlier on and collaboratin..."

6. What design thinking techniques do you think could be used to create more effective research dissemination materials?

2 Responses

Latest Responses

"Empathy mapping to connect with users better. Needs stat..."

7. Who/what do you think the process and results of design thinking would affect?

- The research findings — 1
- Me/my perception or assumptio... — 2
- Other researchers in my field — 0
- Stakeholders — 2
- Policymakers — 1
- Targeted audience — 0
- General public — 0
- Participants — 1

8. What challenges or potential drawbacks do you foresee to using design thinking for research dissemination?

2 Responses

Latest Responses

"Could take a lot of resource and time. Sometimes maybe n..."

9. How important do you think visual appeal is in communicating research findings to a wider audience?

9.12 Average Rating

10. Have you ever encountered challenges in producing, or working with a designer, to create visually appealing and engaging research dissemination materials? If so, please explain

17 Responses

Latest Responses

"Sometimes data or research can be hard to explain in a con..."

" "

"Sometimes, there is wide gap between the expectations of ..."

9 respondents (56%) answered **designer** for this question.

important information · clear enough messages · skilled designers · creativity of some designers · designers in the information · Ideas behind the research · researchers · not all designers · messaging · **designer** · design · talented · worked · vision of · cases designer · graphic designer · designers able · understanding from d · solution done by the designer · information as

11. During peer-review, are visual elements (infographics, charts, icons etc.) a specific element of the review?

- Yes — 11
- No — 1
- Rarely — 2
- N/A — 3

12. If not, why not?

2 Responses

Latest Responses

"Depends on the reviewer. Some journals also redo the figur..."

13. Have you ever received feedback on the design of your research dissemination materials? If so, what was the feedback?

17 Responses

Latest Responses

"Sometimes. It's more focused on the data. "

"Occasionally. Normal advice is to simplify figures, reduce th..."

"I have received feedback on design from researchers who h..."

7 respondents (44%) answered **feedback** for this question.

broader audience · excellent feedback · message of their research · graphic in my thesis · materials · feedback on infographic · informative figures · message · **feedback** · design · feedba · better design · scientific · general · Figures · great f · simple info · data or message · good feedback · design t

14. How do you ensure that your research dissemination materials are accessible to people with disabilities while also being visually appealing?

17 Responses

Latest Responses

"This is a good question, it's not something I currently priori..."

"Color blindness checks - there are some apps. But normally..."

"N?A"

3 respondents (19%) answered **colours** for this question.

clear labelling · publisher/editor · accessible · contrasts in colours · preliminary c · blind people · message · **colours** · color blind · sure texts · designer · experience · check · blind · rarely considered · color pallets · Color blindn · checks - there are some apps · clarity is crucial · difficult to tak

15. How do you evaluate the success of your research dissemination materials in terms of design and communication?

17 Responses

Latest Responses

"Feedback from peers or engagement."

"How much it gets re-used in other presentations"

"Feedback and engagement from users e.g. social media en..."

4 respondents (25%) answered **feedback** for this question.

media engagement · use of th · feedback from researchers · basis of the feedback · no feedback · concepts · specific feedback · social media · Me · feedback as such in general · design · feedba · success · piece of · specifically evaluate · Feedback and engagement · feedback I get on prese · Number of views- People · feedback in particular · terms of enga

16. Have you encountered any challenges in disseminating your research findings using traditional methods?

14 Responses

Latest Responses

"It can be time consuming but no"

"Traditional methods mean research can only be appreciate..."

3 respondents (23%) answered **academic** for this question.

congresses and journal · publications · academic community · difficult · n · material · researchers · **journals** · b · means · **academic** · traditional methods · non · **challenge** · journal articles · academic journals · academic organizations · materials often too complicated · challenge for researc

17. What specific design thinking techniques and graphic design elements have you found to be most effective in disseminating research findings?

15 Responses

Latest Responses

"The more creative the better. I like the ideation step."

"stick to bar charts. Keep colours consistent. think about the..."

"Storytelling narratives that are visually represented and eas..."

3 respondents (21%) answered **design** for this question.

color and shading · group of peers · visual illistration · design concept · eg bending · science slam · span + · video · **design** · Infogra · complex topic · curve · page · info · loss graph · clear · successful · visually repr · lay people · literal trajectories

18. Have you seen any successful examples of creative design thinking being used to disseminate research findings? If so, please name or link them.

15 Responses

Latest Responses

"Nadieh Bremer creates incredible data visualisation"

"Bending the curve of biodiversity loss: https://iiasa.ac.at/ne..."

3 respondents (21%) answered **curve** for this question.

Intergovernmental Panel · AR6 Synthesis · Climate Ch · temperature changes · different · recent · biodivers · biodiversity loss · IIASA · AR6 · **curve** · group/design · biodiversity curve · Islaam · successful example · AR6 graphic · curve infographics · temperature rise · biodiver · came across very recently

Aim: to gain a deeper understanding of the individual opinions and experiences.

Reasoning: to analyse the answers and combine the most frequently mentioned topics into thematic analysis.

Structure: 1. Can you tell me about your role and experience? 2. How do you define research dissemination and communication, and why is it important? 3. In your opinion, what role does design play in research dissemination and communication? 4. What challenges have you faced when using design and design thinking in research dissemination and communication? 5. What opportunities do you see for using design and design thinking in research dissemination and communication in the future? 6. How can researchers and communicators incorporate design and design thinking into their dissemination and communication strategies? 7. What does innovative dissemination and communication mean to you? 8. In your experience, what are some best practices for incorporating design and design thinking into research dissemination and communication? 9. Any final thoughts or comments?

Interviewees: All participants I have had a professional working relationship with in the past, they're familiar with research dissemination and work in the field.

Raw information:

Communicator 1

Communicator 2
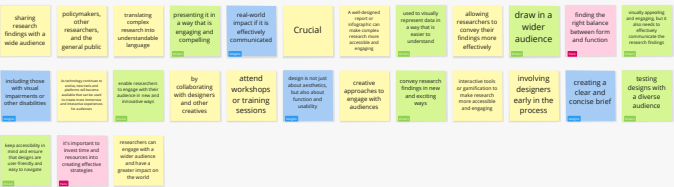
Researcher 1
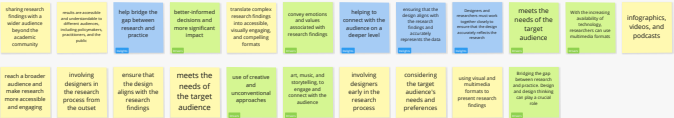
Researcher 2

Designer 1

Designer 2

Information clustering:

Audience

Accessibility

Impact

Themes

Engagement

Knowledge

Technology

Collaboration
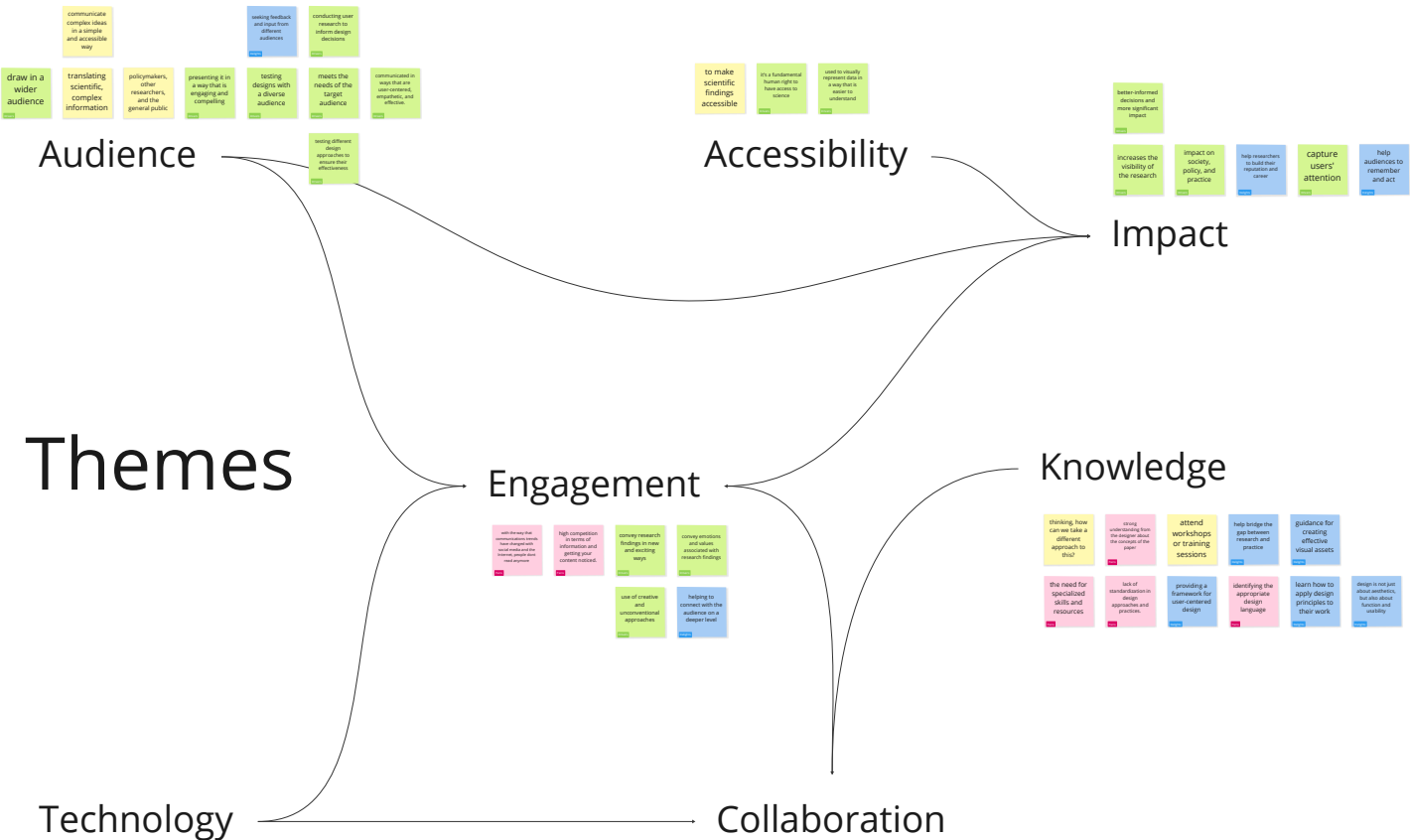
Highlights:

User pains

≡ Pains

What are the main user pains that you identified?
List or copy-paste them here.

Budget | Balance between aesthetics and data | Identifying the appropriate design language

High competition to get content noticed | Changes in technology and trends | Social media attention spans

User gains

≡ Delights

What are the main user gain points that you spotted?
List or copy-paste them here.

Connecting and testing with audiences/ stakeholders | Increasing recognition and reputation of researchers | Bridging the gap between research and practice

Learning and collaborating | Multimedia presentations of findings | Receiving insights and feedback

Trying innovative approaches

User drivers

≡ Drivers

What are the main drivers pushing the users?
List or copy-paste them here.

Increase visibility | Increase impact | Draw in a wider audience

Using creative and novel approaches | Conveying emotions and values | Better informed decision-making

Making accessibility fundamental

Heatmap results:

Use the colours of the sticky notes as a guide: which topics seem to be the most "pink" and therefore causing more user pains?

Which cluster is the most "blue" and has the potential to generate more gains?

What area of the board is more "green" and how do different drivers compare to each other?

Knowledge of design and design thinking frameworks | Balance between aesthetics and research findings | Finding the resources and/or budget

Bridging the gap between research and audiences | Collaborating with designer thinkers and stakeholders | Innovation

Experimentation, creativity and novel approaches | Increase in impact and circulation | Making accessibility a requirement

Aim: To gain a deeper understand of the 'as is' process with a select group of experts relevant to my research questions.

Reasoning: My intention for this focus group was to have each participant gain an understanding of the others behaviours as well as create a combined, theoretical process beginning with research and applying design thinkign, design and communications much earlier on.
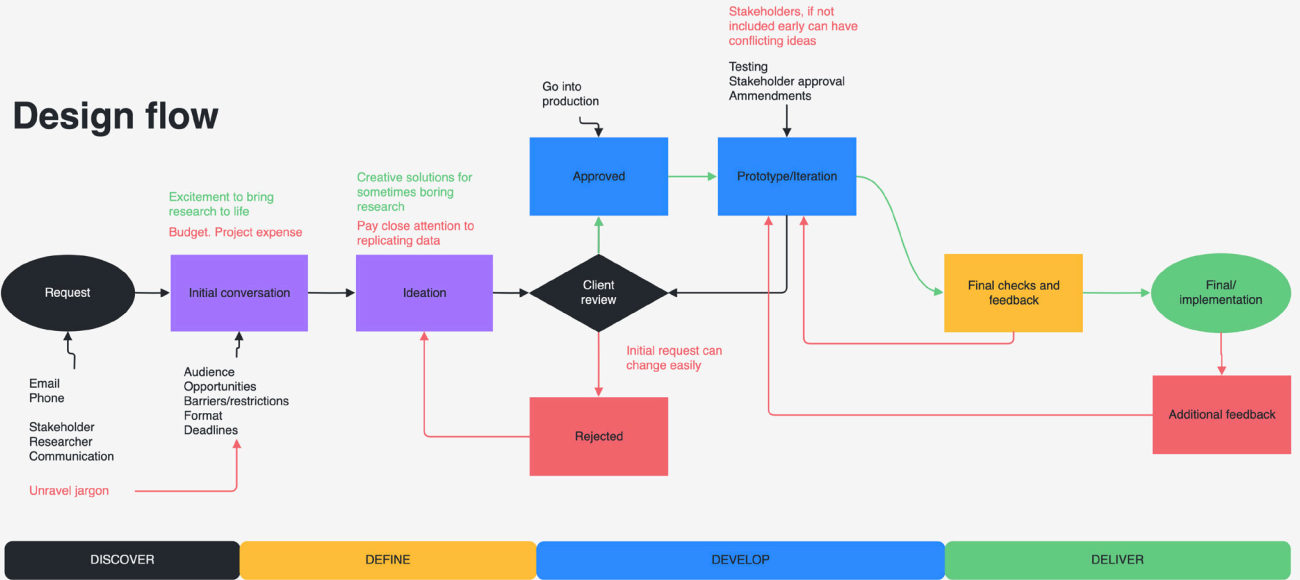
Structure: Began with introductions from each participant: 1 designer, researcher and communicator. Each participant then took it in turns to create their flowchart whilst describing in a general sense what usually occurs at each stage.

Invitees: The 3 chosen participants were taken from my survey findings. It was important to me that they worked in different institutions as to not increase bias within the results.
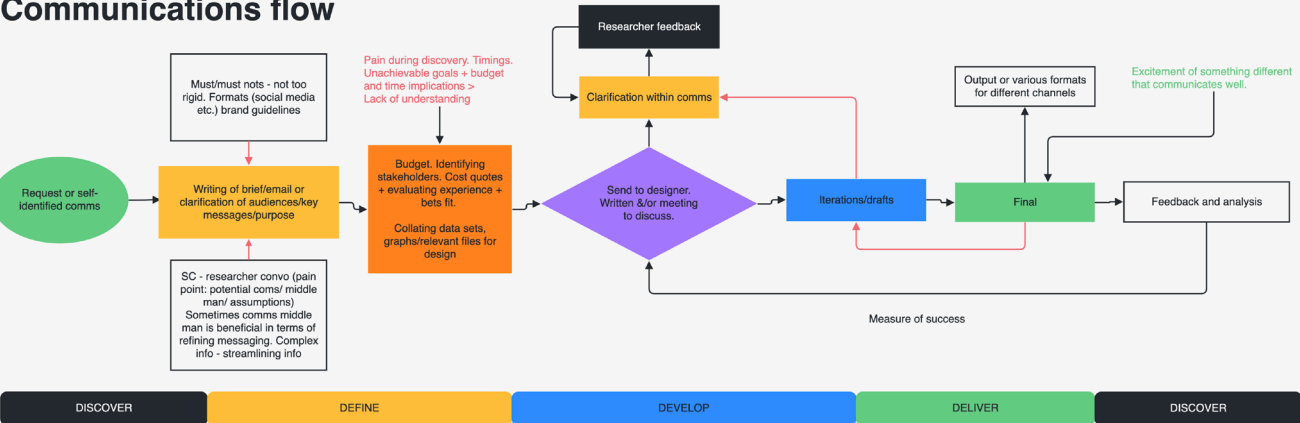
Research flow
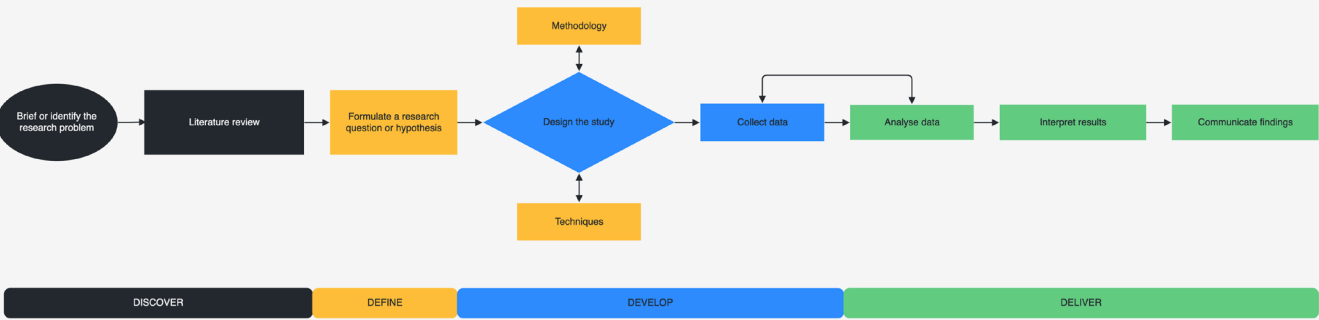
Design flow

Communications flow