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Observations of an illustrator and a landscape architect

This paper aims to investigate how visual techniques can improve collaboration and foster participatory design processes, ultimately leading to sustainable change. The authors propose that utilising various visualisation techniques can lead to improved solutions for future challenges that require collaboration across different fields. Drawing on their combined 20 years of experience, one as an illustrator and the other as a landscape architect, they emphasise the benefits of visual facilitation that stem from their personal experience and preference for visual thinking and making sketch notes. By exploring the cognitive aspects and the potentials found in visual thinking, the authors aim to shed light on the valuable contributions of visualisation in facilitating effective collaboration and driving innovation in multidisciplinary contexts. The authors have chosen graphic recording and gigamapping as two co-creating methods to discuss the benefits and drawbacks of these visual methods and provide a deeper understanding of how visualisations can enrich systems oriented design processes. Using these two examples, they want to motivate system oriented designers not only to enrich their processes with visualisations but also to recognise the strong influence of such methods in co-designing processes to promote collective idea generation. This paper will explore the extent to which visual thinking techniques can support collaborative and participatory processes in systems oriented design.

KEYWORDS: Facilitation, visualisations, participatory processes, collaborative work

RSD TOPIC(S): Methods & Methodology, Architecture & Planning

Introduction

Systems oriented design takes a holistic view of complex systems and applies design methods to understand, change and improve the system in question and its interdependent parts. As a designer working with systems, one needs to consider various factors, including social, economic, and environmental aspects of the existing system, changes that are suggested and applied to existing ones, and the making of new systems. A designer alone cannot solve these problems and requires an interdisciplinary approach that involves multiple stakeholders. If a system is to change for the better, it is important to make sure that all the relevant voices are heard. An important role of a designer is, therefore, the ability to facilitate collaborative processes and conversations. Visualisations are essential in systems oriented design as they help to communicate complex information and identify patterns and relationships in systems.

Everyone thinks in pictures

Visual thinking is a fundamental aspect of cognitive processes whereby the brain engages in abstract thought through the utilisation of imagery (Arnheim, 1969). These mental images, often operating at a subconscious level and taking the form of elements or symbols, play an important role in abstract thinking and the capacity to envision and generate novel ideas. As Rudolf Arnheim stated, "perceptual and pictorial shapes are not only translations of thought products but the very flesh and blood of thinking itself" (Arnheim, 1969). This emphasises the natural connection between visual perception and cognitive processes, suggesting that visual imagery is not merely a reflection or representation of thoughts but rather an integral component intertwined with the very essence of thinking. By tapping into the power of visual thinking, individuals can unlock new realms of imagination and creativity, enabling them to conceptualise and bring forth innovative ideas.

This realisation underscores the significance of actively employing and advocating for visualisation as a powerful tool in navigating complexity within multidisciplinary endeavours. By harnessing the potential of visualisation techniques, individuals involved in diverse fields can effectively communicate complex concepts, foster interdisciplinary understanding, and facilitate collaborative problem-solving. Visual representations enable the translation of intricate ideas into a shared language that transcends disciplinary boundaries, enhancing clarity and coherence in the face of complexity.

Facilitation

In the field of systemic design, one of the most important roles of the designer is, therefore, that of a facilitator to establish processes that foster a sense of cohesion and understanding. This includes understanding, acknowledging and taking into account each individual's perspective. Simultaneously, it is crucial to foster a shared understanding of current challenges. This collective perspective stimulates imaginative thinking, which is essential for ideating and making decisions for the future. A well-facilitated process should “go beyond individual intelligence and harness the power of a group’s intelligence” (Fitch, 2023). By fostering collaboration, designers have the ability to unify various stakeholders, enabling a collective exchange of ideas and promoting a shared understanding. Through these efforts, designers play a critical role in bridging gaps, facilitating effective communication, and fostering an inclusive environment where all voices are not only heard but valued.

The role of the designer

Most designers possess a notable “superpower” characterised by their skills to transform abstract ideas and thoughts into visual representations. This unique ability enables them to facilitate effective communication by bridging the gap between conceptual notions and tangible visual representations. Even the simplest sketch, such as a smiling face, can quickly convey an emotion, an accomplishment that would otherwise require extensive explanation and could easily be overlooked. Designers need to harness this superpower and aid those who are less familiar with such methods. Visualising to aid thinking will help to establish common ground among individuals, fostering a shared understanding and promoting collective idea generation.

Exploring two visual group methods

Because designers can shape processes with the goal of stimulating sustainable and regenerative system transformations, it is critical to recognise which situations require which specific tools and methods. In this paper, visualisations are spotlighted as key instruments in dialogue, and graphic recording and gigamapping are chosen as two distinctive visualisation techniques that optimise conversational processes. Both methods are used to capture conversations between people, and the visualisations essentially reflect the content of the dialogue. While they may share similar objectives, their approaches and results diverge. The primary distinction between these two methods lies in the creation process of the visualisation itself. When utilising gigamapping as a tool in dialogue, the designer guides the participants to take an active role in creating the visuals. Frequently, these participants may have limited experience or confidence in producing content they perceive as visual. Graphic recording, on the other hand, involves a designer or illustrator with specialised visualisation skills. These visualisations are mostly created by a trained professional. Participants do not draw themselves but observe how the trained facilitator visually records what is discussed.

How can the application of different visual thinking techniques enhance collaborative and participatory processes in systems oriented design? In the following, the strengths and possible limitations of the two approaches of graphic recording and gigamapping in the context of systems oriented design are discussed. The first part introduces graphic recording and gigamapping, followed by reflections on each method and a summary of the two methods.

Graphic recording

Graphic recording is a technique that involves capturing and illustrating live discussions, presentations, or meetings in a visual format. It uses a combination of words, symbols, images, and diagrams to visually represent key ideas, concepts, and conversations in real-time. It can be done on large paper or whiteboards using markers or digitally using graphic tablets or software. In any case, the content is not only reproduced graphically one-to-one, but meta-levels are opened, and new links are created. Graphic recording supplements the linguistic processing of the left brain with the visual-spatial processes

of the right brain. Because facts and images are linked, content can be retrieved more quickly. Skilled graphic recorders actively listen, synthesise information, and translate it into visuals in real time. They use a combination of text, images, symbols, and diagrams to create a dynamic and engaging visual representation of the conversation or event.

The purpose of graphic recording is to enhance communication, engagement, and understanding by transforming complex information into a visual form that is easily digestible and memorable. It serves as a visual summary or documentation of the discussion or event, providing a tangible and visual record of the key points, connections, and insights.

The role of the graphic recorder can be passive without being actively involved in the discussion. However, the role can also be active, supporting what wants to emerge in the group with moderation. A special form of graphic recording is visual facilitation, where the focus is more on moderation. What is visually recorded (including differences of opinion, moods, etc.) is repeatedly fed back into the group. In this way, the group is encouraged to reflect, and there is more dialogue about the content than simply documenting it. Graphic facilitators can sense what wants to emerge in the group and support the process through moderation. They also listen to the images people have in their language and, by this, capture the unsaid moods and feelings that are floating in the room. The visual record does not claim to be complete in the sense of a report. Big ideas and essences are captured but not everything that is said.

Graphic recording was originally limited to internal meetings but is now often used at larger public events such as conferences and citizen involvement. Participants receive a visualisation of what they have heard, which can open up new perspectives for them, and they have documentation after the event. The graphic documentation of what is said via graphic recording adds a visual reflection level to the event and makes complex processes easier to understand.

Overall, graphic recording is a powerful tool for capturing, synthesising, and communicating information visually. It supports engagement, comprehension, and memory retention, making it valuable in a wide range of contexts, including meetings, conferences, workshops, and collaborative sessions.

Reflections

According to experienced facilitators, when participants see their contributions being recorded, they feel appreciated and acknowledged. This results in higher engagement during events, better communication, and improved collaboration. Another benefit of graphic recording, apart from the visual summary, is a better understanding of what was discussed and a better memory. From a systems-oriented point of view ideas and information are organised in ways to help people see patterns and relationships. By linking different contributions from individuals in the group, the group can observe how they relate to each other. "The graphic recorder is the pen of the group" (Gärtner, 2014) and participants watch the image being created and at the same time witness that what is floating in space is being captured. The knowledge of the group is made visible and structured. In addition to the content, the graphic record also reflects the process the group has gone through. The result can be a surface for reflection and allows the group to further discuss and exchange what has been understood. By creating a graphic record, you can invite individuals who were unable to attend the initial session to join in on the conversation later. Unlike a gigamap, graphic documentation is readable and gives people who are not familiar with the content an overview of what was discussed. In contrast to gigamapping, where a group creates a map or drawing together, the graphic facilitator takes on the crucial task of visualising the discussion piece by piece, highlighting the key messages and leaving out unnecessary details. This makes the graphic presenter a kind of judge because he unintentionally filters the content through his own perception, as his personal imprints can also influence him. It is interesting to investigate to what extent it changes behavioural and thinking patterns when participants actively draw themselves, as in gigamapping, or to what extent it is a pleasure to watch a graphic facilitator create images and if this encourages a different kind of participation.

Gigamapping

Gigamaps work as visual representations of a complex system where functions, relationships and interdependencies are identified. They are large-scale and can be highly detailed maps that capture and visualise the many dimensions and perspectives

of a system. The detailed maps serve as “rich multi-layered design artefacts that integrate systems thinking with designing as a way of developing and internalising an understanding of a complex field.” (Sevaldson, 2015).

The process of creating a complete, layered gigamap involves visualising and interpreting discussions from meetings and workshops. Gigamapping serves as a tool in these situations, where the participants themselves use markers to draw out detailed system maps on large-format paper. Ideally, these maps emerge in conversation with a diverse group representing various facets of the system under investigation. The format of gigamapping naturally encourages participation in collaboration. "In the vast majority of cases, if facilitated well, the gigamapping format creates an open and communicative atmosphere." (Wettre, 2019).

By using gigamapping as a method, one can tease out pre-existing knowledge (Sevaldson, 2021) from experts and help stakeholders gain a holistic understanding of a complex system by visualising its various components, interactions, and contexts. They provide a comprehensive view that goes beyond individual elements and highlights the interconnectedness and interdependencies within the system. This helps in understanding how changes or interventions in one part of the system can affect other parts. By visualising these relationships, stakeholders can better analyse the potential impacts and unintended consequences of decisions.

Reflections

In the utilisation of gigamapping as a tool, the designer's role varies greatly. Often, it is the designer, who proposes the participants to be involved in the process. During the facilitation of gigamapping sessions, it is the designer's responsibility to shed light on the exercise's objectives, outline roles, and emphasise the significance of the participants' contributions. During the mapping, the designer is responsible for encouraging and directing constructive discussions and making sure that all participants make visual representations of the conversation on paper. Crucially, while the designer oversees these discussions, they are, in most cases, not the primary creators of the visualisations themselves.

The maps created in workshops are often used as background material to develop more detailed and visually refined gigamaps that better communicate the system they illustrate. Designers use these gigamaps as tools to identify intervention areas, leverage points, and potential solutions.

Despite the many benefits, one must be aware of the potential pitfalls of gigamapping. One obstacle in the gigamapping sessions is the hesitation towards “drawing”. One can often find that there are some more active drawers that make the marks. These people are gaining more definition power than those who hesitate to draw. If the session is not facilitated well, the outcome might be far from accurate. As the drawings become artefacts of the conversations, they can be used to explore various scenarios or potential future states of a system, which can sometimes result in oversimplification or misrepresentation of complex dynamics. Moreover, they may not always effectively capture the potential impacts of changes, policies, or interventions.

Nevertheless, gigamaps continue to be powerful tools for system understanding, analysis, and communication. They contribute significantly to collaborative problem-solving, primarily fostering shared understanding and facilitating informed decision-making in complex systems.

Concluding thoughts

This paper proposes that visual thinking techniques play a pivotal role in SOD by fostering effective collaboration across disciplines, enhancing comprehension of complex systems, and stimulating sustainable change. Through exploring the cognitive aspects of visual thinking and its practical application in fields, looking in particular at graphic recording and gigamapping, it is demonstrated how these visualisation techniques can be employed to convey complex ideas, bridge disciplinary boundaries, and facilitate interdisciplinary problem-solving, ultimately driving innovation and sustainable development in design processes. To bring about systemic change, one needs to be aware of the different biases and make decisions based on objective and comprehensive information, understanding the context and consequences. Visual representations help to achieve a common and, thus, better understanding of what is being discussed. Nevertheless, it is important to be aware of the chosen point of view

and the limitations of a constructed visualisation. When presented as a sophisticated, convincing illustration, it can be unintentionally perceived as an indisputable portrayal of reality. It is important to understand that the visualisation only reflects the decisions of those involved and that no aspect of it is unchangeable or absolute. Moreover, it is essential to be aware of potential biases that may influence our perception and interpretation of the visualisation, emphasising the need for a critical and balanced perspective. Is it possible to see the same as you see when "I Spy with my Little Eye"?

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