Capturing Complex Dynamics of Networked Learning Through Visual Mapping

Simon Skårhøj, Capacity Development Advisor at Danida Fellowship Centre and Doctoral Researcher at Aalborg University, Department of Culture and Communication, ssk@dfcentre.dk
Lone Dirckinck-Holmfeld, Professor, Department of Culture and Communication, Aalborg University, lone@ikp.aau.dk

Intended audience

The intended audience is researchers interested in innovative qualitative methods for collecting data on networked learning dynamics. The workshop is also relevant for practitioners and consultants who wish to explore the relationship between learning activities and their practical application.
The visual mapping method functions both as a research-oriented data collection technique and as a concrete learning activity. It can be used, for example, to help participants connect learning from a course to their own work context.

Workshop description

Complex networked learning dynamics in professional and work-related contexts are challenging to observe and difficult to capture empirically, particularly when the purpose is to understand how such processes evolve over time.

In an ongoing research project, *capacity4transition* (2024-2027) - a collaboration between Danida Fellowship Centre and Aalborg University – visual mapping has been used both as a method and analytical tool. The purpose was to generate insights into the dynamics between a three-week professional course and the participants´ work context. The courses are based on problem-based and experiential learning principles and are offered by the Danish government institution Danida Fellowship Centre, to partners supported by the Danish Development Cooperation. The research project explores how designs for learning can enable change at individual, organisational and systemic levels.

The qualitative visual mapping technique was integrated into 45 semi-structured interviews with 15 participants conducted before, during and six months after a course on either Responsive Project Management or Circular Economy. The Responsive Project Management course emphasizes specific tools and culminates in an individual project and action plan. The Green and Circular Economy course is a broader and thematic. In this course the participants develop a shared country project and action plan. The participants are from public sector and private sector and involved in a sustainability transition process from linear to circular waste management in Kenya and Indonesia. The intention with the mapping method was to deepen the participants´ reflections by enabling them to visualize and articulate their contexts, experiences and perspectives at three different time points. The workshop builds on insights and experiences gained through this interview process.

Network learning dynamics
Network learning dynamics can be understood through the lens of learning ecologies. Barron (2006) draw on the concept of information ecologies to describe socio-technical ecologies composed of both relational and material resources. These ecologies are dynamic and open systems, which can be influenced in multiple ways (ibid, p200), including through professional short courses.

In most professional settings, the primary focus is on work rather than formal learning. Yet learning is deeply embedded in everyday activity. Understanding learning in such contexts therefore requires an integrated view, which treats the work ecology and the learning ecology as mutually constitutive rather than separate domains. Networked learning underpins (Banks et al., 2003) the interactions between the human and non-human elements within an ecology and offers a conceptual framework for understanding learning processes within the ecology.

Proceedings of the Fifteenth International Conference on Networked Learning 2026,

Edited by: Declercq, L., Loeckx, J., De Laat, M., Dohn, N. B., Ryberg, T.

In resent years, network learning has been further conceptualised to involve processes of collaborative, co-operative and collective inquiry, knowledge-creation and knowledgeable action, underpinned by trusting relationships, motivated by a sense of shared challenge and enabled by convivial technologies (Goodyear et al., 2021, p. 319). The short courses manifest themselves in multiple parts of the participants´ network. Even though the courses use problem-based learning methods, the participants use various insights from the course (and beyond the course curriculum and objectives) to support collaboration and problem-solving in various parts of their context maps and not only in relation to the specific problems addressed during the course itself.

Value creation in networked learning

The semi-structured interviews are inspired by the value creation framework (VCL) (Wenger-Trayner & Wenger-Trayner, 2020; Wenger et al., 2011). The value creation framework identifies eight types of value. Four of these - immediate value, potential value, applied value and realised value - are closely connected to the learning processes. The framework also include oriented value, strategic value, enabling value and transformative value, which capture broader and longer-term forms of value creation. Immediate and potential value were the primary focus of the interviews conducted at the end of the course. In the first interview, participants mapped their context and reflected on the anticipated value they expected from the course. Applied and realised value were explored in the interviews six months after the course. The remaining value types were included when relevant to the participants´ experiences and reflections.

Visual mapping technique – three layers

The visual interview technique invites the participants, or actor, to draw a visual representation of their context. The actor select a focus for the network, which guides what elements are included or excluded. In the research project, the focus was the actors participation in and motivation for a course relevant to their professional work. Thus the focus was defined from the actors perspective rather than by the formal learning objectives set by the course provider. From a network science perspective, the map is an ego network, which places the ego, actor, at the centre of the visual network map. The network is created based on the actors understanding and experience of their context (Robins, 2015, p. 51). The actor identifies human and non-human nodes relevant to the focus and draw ties between the nodes and the actor as well as between nodes. The nodes may include individuals, colleagues, groups of colleagues, organisations, policies or other documents and any other elements the actors consider relevant. Each node is illustrated by an icon.

The actor can add qualitative attributes the nodes, which can indicate importance, frequency of interaction, and strength and direction of connection. The importance is shown through the relative size of the icon. A large organisational icon (e.g., a building) indicates high importance, while a smaller icon indicates a lower importance. How often the actor is interacting with the node is indicated by how close of far the icon is placed from the actor. The strength of the relationship is indicated by the line between the actor and the node. A very bold line indicates a strong connection, while a dotted line a weak connection. The direction of the relationship is indicated by an arrow. It can be a one-way or two-way connection depending on if the actor is mainly communicating to the node or if there is a reciprocity in the communication (two-way). Identifying the focus, nodes, and ties constitutes the first layer of the visual network mapping, which emphasises the structural elements of the ecology.

The second layer explores qualitative dynamics within the network. Actors identify projects or conversations in the network, as well as enabling and constraining factors, boundaries and dynamics related to identity, legitimacy, agency, power and value creation (Wenger-Trayner & Wenger-Trayner, 2021).

In the third and final layer actors mark challenges and opportunities using yellow and red colours, and indicate where the course is expected to contribute to the network using green. The green areas also represent the anticipated value creation from the course.

At the end of the course another interview is conducted. The interview focuses on the actors experiences, the immediate value of the course, and the potential value they anticipate when returning to their work context. New elements in the network are marked in blue, including potential uses of insights or new relationships formed during the course.

In the post-course interview conducted six months later, the focus shifts to applied value and realised value, which are highlighted on the update map. Example:

Figure 1

Workshop intentions
The purpose of the workshop is to further explore this method and its affordances for understanding networked learning dynamics. Participants will gain first-hand experience with the technique through a practical exercise and will also learn from insights generated across 45 interviews conducted using the method before workshopping the method to advance it theoretically and practically.

The visual interview technique is inspired by situational analysis (Clarke et al., 2022) and social learning theory including system convening. (Wenger-Trayner & Wenger-Trayner, 2021). During a facilitated process, The mapping process can begin from different starting points, such as focusing on the individual participant or on a specific challenge or purpose. It can be conducted individually or collaboratively in groups.

Participant engagement
The workshop is participatory and experiential, with limited formal presentations. Participants will be introduced to the method by applying it directly in a networked learning context, either on their own or in groups. They will then be invited to reflect on their experience and engage in group discussion about aspects that are important for the further development of the method.

Participant outcomes
The workshop is expected to contribute to at least three outcomes:
- Individual outcome: The participants will gain insights into their own networked learning landscape.
- Method inspiration: The participants will acquire both theoretical and practical insights into qualitative data collection in a networked learning context.
- Co-creation: The participants will co-create the method theoretically and practically, leading to a more holistic and solid description of the method.

Workshop alignment with conference themes
The workshop aligns with several of the conference themes. In particular, it contributes to; "*Philosophies, theories, methodologies, and research designs",* through its visual network mapping technique.

It also supports; "*Networked learning in formal, non-formal and informal contexts of learning and development across the lifespan"*, since the mapping technique extends beyond formal networks and structures to capture the lived experiences of those using the method.

Workshop process/activities
The workshop will consist of three phases:
- **Phase 1 – Experimental:** Participants will familiarize themselves with the current stage of the method by engaging in the mapping of a networked learning context on their own or in groups.
- **Phase 2 – Case Clinic:** Using a structured process, participants will engage in three rounds: (a) asking clarifying questions to the method, (b) sharing what the experience reminds them of—particularly in relation to qualitative methods, and (c) offering ideas and suggestions for areas to explore further.

- **Phase 3 – Collective Exploration / Co-creation:** Participants will then explore emerging questions together in small groups and share their insights in a closing plenary session.

The workshop facilitators will collect input from participants and share a written reflection, along with updates on a potential method paper development process, after the workshop.

References

Banks, S., Goodyear, P., Hodgson, V., & McConnell, D. (2003). Introduction to the special issue on: Advances in Research on Networked Learning. *Instructional science*, *31*(1/2), 1-6. https://doi.org/10.1023/A:1022583918064

Barron, B. (2006). Interest and Self-Sustained Learning as Catalysts of Development: A Learning Ecology Perspective. *Human development*, *49*(4), 193-224. https://doi.org/10.1159/000094368

Clarke, A. E., Washburn, R., & Friese, C. (2022). *Situational Analysis in Practice : Mapping Relationalities Across Disciplines* (2nd ed.). Taylor & Francis Group.

Goodyear, P., Hodgson, V., Jandrić, P., Bonderup Dohn, N., Ryberg, T., & de Laat, M. (2021). Networked Learning: Inviting Redefinition. *Postdigital science and education*, *3*(2), 312-325. https://doi.org/10.1007/s42438-020-00167-8

Robins, G. (2015). *Doing social network research : network-based research design for social scientists*. Sage Publications Ltd.

Wenger-Trayner, E., & Wenger-Trayner, B. (2020). *Learning to Make a Difference - Value Creation in a Social Learning Spaces*. Cambridge University Press.

Wenger-Trayner, E., & Wenger-Trayner, B. (2021). *Systems convening: a crucial form of leadership for the 21st century*. Social Learning Lab.

Wenger, E., Trayner, B., & de Laat, M. (2011). *Promoting and Assessing Value Creation in Communities and Networks: A Conceptual Framework.*