Conversation games for digital transformation

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Abstract
Digital learning must move beyond tools and skills to meaningfully engage people and help them understand digital technologies and AI in their everyday lives. This paper explores how conversation games can support data literacy development in adult learning education setting. Empirical examples are drawn from a case study conducted in a data literacy workshop attended by continuing education students from diverse professional backgrounds. The workshop used analogue games as a key learning activity to raise awareness about data creation, digital footprints and data types. The games can be characterised as conversation games because they utilise social interaction reflective dialogue as key learning mechanics. Students' reflections on learning experiences were collected through paper questionnaires with quantitative and qualitative questions after playing the games. After thematic analysis of 62 student responses, three themes were constructed regarding the educational value of conversation games: (1) Inclusive and safe learning environment, (2) dialogic, two-way communication, and (3) social connections.
The key argument is that conversation games offer a potential for advancing digital learning due to their inherently social nature. Informed by sociomaterial and networked learning theoretical perspectives, learning is understood as emerging through everyday actions and activities situated within social and material contexts. This paper argues that the conversational and turn-taking format of analogue games created productive networked learning situations through encouraging social connections, and dialogic talking and thinking. The paper concludes that the rule-based interaction and informal sociality of conversation games represent a valuable and productive game-based learning modality for developing digital and data literacies, particularly because digital practices themselves are fundamentally socially embedded and motivated.

Keywords
Conversation games, data literacy, digital transformation, networked learning, sociomaterial, game-based learning.

Introduction

While policy priorities aim to foster quality and inclusive digital learning, overall digital skill levels across Europe remain low, highlighting the ongoing need for further education and training (Datatilsynet, 2024; European Commission, 2023). To help people understand digital and data-driven technologies in everyday situations, digital learning initiatives must move beyond technical solutions and individual skills. In this paper, we explore how conversation games can support awareness of digital data through offering inclusive, relevant, and engaging training opportunities.
The paper follows a sociomaterial, networked learning perspective on game-based activities as embedded in social and material practice (Castañeda et al., 2024), exploring games' potential as social spaces for reflection, and shared meaning-making. Since many digital practices are deeply socially motivated, the informal sociality and playfulness of analogue conversation games offer an effective, engaging path to build foundational digital literacies and a shared understanding of digital technologies.

Conversation games for learning

In this paper, *conversation games* are understood as card or tabletop games that use questions and tasks designed to prompt meaningful dialogue as a core game mechanic. While these games are typically used to foster reflection, communication, and social interaction between players, they do not necessarily aim at learning or understanding

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as explicit outcomes. In informal contexts, they could appear as 'party-' and 'ice breaker' games, or 'conversation cards', used to promote closeness and address communication challenges (Potočnik, 2024). Meanwhile, conversation games have also been successfully used in formal educational settings. They have, for instance been used to support the development of academic discussion skills (e.g. Reese & Wells, 2007), trust-development (Depping et al., 2016), and to facilitate discussions around difficult topics, such as death (Van Scoy et al., 2016). Following McEwan et al. (2012), the formalised turn-taking and rule-based social interactions in games can be seen as creating an abstract distance that offers a safe space for exploring practices from other contexts. Simultaneously, the social activities generated in games can be understood as 'legitimate forms of human contact which create a shared experience through an (albeit stylized) form of human interaction' (McEwan et al., 2012, p.555).
Following this, conversation-focused games offer exciting educational potential for developing data literacy and support digital transformation.

Research Context

The empirical examples in this paper are drawn from a study of an after-education data literacy workshop informed by a case study research approach (Simons, 2009). The workshops were in-person, optional events offered to complement the online teaching. Six workshops were organised in the spring semester of 2024 and attended by 78 students from diverse professional backgrounds. Analogue data literacy learning games were used as part of the teaching and the students spent around two hours playing the games, including introduction and de-briefing sessions with further discussions and reflections. The aim of the workshop was to enable students to interact face-to-face with their peers, engage in interdisciplinary collaboration, and discuss the data literacy concepts they had studied online.
The empirical data were collected after the students had played two analogue learning games. We provided paper questionnaires, with some quantitative and some open-ended, qualitative questions about the participants' learning experiences and how the games contributed to these experiences. Participation was voluntary and informed, with 62 students deciding to take part. We conducted a thematic analysis of the open-ended answers, constructing themes from recurrent topics in the material (Braun et al., 2018).

Two data literacy learning games

The first game, Game of Phones, is a turn-based game, played in groups of 4 to 6, using a deck of playing cards and the players' digital device (DALI, 2023). It is designed to promote digital participation and asks players to use internet search skills to look for specific items online in the form of images, videos, websites, and music tracks. One player takes the role of the judge, picks a card and reads it to the others, for instance: 'Find an image of your favourite breakfast'. Then, after 1 minute, each player takes turns in sharing what they found, and the judge decides the winner. During the workshop, this game generated positive group interaction almost immediately, and thus appeared to serve as a social catalyst. During the debrief, the workshop-facilitators initiated group reflections about what data could have been created by the players' search activity during the game, with the aim of raising curiosity and awareness that we constantly create information or data footprints when interacting with digital devices.
The second game, Data Iceberg, is a memory game that uses a deck of cards and individual player boards that aims to raise awareness about visible and invisible data types (DALI, 2023; SLATE, 2024). Spaces on the individual player board represent different categories of data. Players first need to find a matching pair, which when placed together form a story. The player then needs to recognise data creation in the story and categorise it to the correct type of data on their player board. During the workshop, the players engaged in discussions and collaboration while they categorised the pairs, even though it is a competitive game.
By incorporating questions and rules that promote turn-taking, interaction and sharing reflections as key game mechanics, the two games can be categorised as 'conversation games'. Both games used were initially designed through the Data Literacy for Citizenship project (DALI, 2024), before being further developed in the Delta i Data! project (Klykken & Barendregt, 2025).

A sociomaterial, networked perspective on digital learning and games

Sociomaterial theories foreground social practice as maintained and shared through relational, bodily, discursive, and material enactments (Hopwood, 2016). From this perspective, learning occurs through everyday actions and activities. While each enactment of an activity is unique and situated, over time, each enactment has consequences that create and restrict future opportunities for later actions and activities.

A *networked learning perspective* highlights learning as relationally entangled and situated, both physically and socially (Carvalho & Yeoman, 2021). Thinking about learning from this perspective accentuates relational processes such as discussions and cooperation to build shared understandings, while also acknowledging how spaces, materials and technologies actively contribute to the quality of the learning process.

Castañeda, Villar-Onrubia et al.'s (2024) concept of *game-based networked learning strategies* merges playful learning and network learning principles to understand how games can provide productive networked learning situations through foregrounding learner agency while encouraging connections and collaboration, and provide flexibility regarding learning contexts. This resonates with a social practice perspective on games, emphasising that when players engage in games, they also engage in a social knowledge development process, which involves material and social relationships, as well as broader forms of interaction and cultural expressions (Plass et al., 2019).

Similarly, sociomaterial perspectives highlight how digital practices are socially embedded (and socially motivated) and emerge in everyday activities across formal and informal settings (Gourlay & Oliver, 2016; Gravett, 2024a, 2024b).

Students' experiences of the analogue data literacy conversation games

This paper explores how analogue conversation games can support digital transformation. In our analysis of the continuing education students' open-ended answers, we developed three themes. Students reported that engagement through analogue games in the workshop: 1) *offered inclusive and safe learning environment*, 2) *contributed to dialogic, two-way communication, and* 3) *fostered social connections.*

1. Inclusive and safe learning environment

One student explained that the use of games: 'Lowered the threshold to "think out loud". Not only the "confident" take the word'. Another student noted that the games' integration of 'trial and error' and space for discussions facilitated a more level playing field in the learning situation, stating that: 'Everyone is more on an equal footing'. Following this, it can be understood that the students experienced that the game contributed to a feeling of safety and inclusion in the situation, which allowed all participants to actively engage in the learning activities.

2. Dialogic, two-way communication

In the open answers, the students often mentioned being socially *active* and needing to *listen* carefully to others while playing. For instance, as one student noted, having to: 'Listen to others and think--> can change your reasoning'. Another student wrote: 'Fun. Had to think together with others. Important for applying new knowledge'. This demonstrates how the rule-based and turn-taking format encouraged active listening, and how this can impact learning.

Several students noted that the data literacy games required them to communicate ideas, for instance: 'Expressing myself to new, unknown people, put together information, and visual objects into meaning'. Another student stated that they learned through having to: 'tell stories so that it is easier for others to relate to the answer'.

This highlights how the games' sociality encouraged two-way communication requiring both listening and expression. Students also described the learning experiences being positively affected by dialogue, for example: 'Dialogue and interaction with others provide new/different perspectives --> you make new discoveries'.

3. Social connections

The students recurrently pointed to the games' fostering of social connections, and how the social connections led to connecting to the learning. One noted that: 'The social (aspects) of the games helped to create the social of the

group'. Another pointed to that: 'The social interaction with continuous input :) from others, gives new impulses and leads my thoughts into new tracks that I would not have had alone'. Furthermore, the students reflected that it was: 'Fun to play in groups. Liked that the games are analogue - more room for discussions and socialising'. Thus, it becomes clear that the social aspects of the analogue games and their conversational mechanisms were beneficial for learning.

Concluding thoughts: Affordances of conversation games for digital learning

Following the above findings, conversation games can be understood as valuable for promoting digital learning due to their potential for (1) safe and inclusive learning environments, (2) two-way dialogue (listening/expressing), and (3) social connection. Students highlighted how the games connected and put them in the position listen carefully to others, express themselves, and 'think together' with others, and how this process led them to consider new or different perspectives.

Thinking further, while drawing on sociomaterial and networked learning theories, the students' reflections on the use of analogue conversation games in the data literacy workshop highlights the active role of game materials, rules, everyday examples of digital practices, and relational processes. It also indicates how the games contributed to digital understandings being socially shared, negotiated, and thus made meaningful. Following this, we argue that the abstract, rule-based and turn-taking forms of social interaction, together with the simultaneous informal sociality of analogue conversation games, can shape the quality of the learning situation and provide a relevant and productive social, game-based learning modality for digital learning and data literacy.

References

Braun, V., Clarke, V., Hayfield, N., & Terry, G. (2018). Thematic Analysis. In P. Liamputtong (Ed.), *Handbook of Research Methods in Health Social Sciences* (pp. 843-860). Springer Singapore. https://doi.org/10.1007/978-981-10-5251-4_103

Carvalho, L., & Yeoman, P. (2021). Performativity of Materials in Learning: The Learning-Whole in Action. *Journal of New Approaches in Educational Research, 10*(1), 28-42. https://doi.org/http://dx.doi.org/10.7821/naer.2021.1.627

Castañeda, L., Villar-Onrubia, D., Haba-Ortuño, I., Postigo-Fuentes, A. Y., & Arnab, S. (Eds.). (2024). *Game-based Networked Learning* (Vol. 13). https://doi.org/10.54337/nlc.v13.8528.

DALI. (2023). *DALI Toolkit: Game catalogue*. Retreived from: https://toolkit.dalicitizens.eu/catalogue

Datatilsynet. (2024). *Personvernundersøkelsen 2024: Et temposkifte i digitaliseringen [The Privacy Survey 2024: A change of pace in digitalisation]* [Report by the Norwegian Data Protection Authority]. https://www.datatilsynet.no/regelverk-og-verktoy/rapporter-og-utredninger/personvernundersokelser

Depping, A. E., Mandryk, R. L., Johanson, C., Bowey, J. T., & Thomson., S. C. (2016). Trust Me: Social Games are Better than Social Icebreakers at Building Trust. *Proceedings of the 2016 Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '16). Association for Computing Machinery*, 116–129. https://doi.org/10.1145/2967934.2968097

European Commission. (2023). *2030 Digital Decade: Report on the state of the Digital Decade 2023*. E. Commission. https://ec.europa.eu/newsroom/dae/redirection/document/98641

Gourlay, L., & Oliver, M. (2016). It's Not All About the Learner: Reframing Students' Digital Literacy as Sociomaterial Practice. In T. Ryberg, C. Sinclair, S. Bayne, & M. de Laat (Eds.), *Research, Boundaries, and Policy in Networked Learning* (pp. 77-92). Springer International Publishing. https://doi.org/10.1007/978-3-319-31130-2_5

Gravett, K. (2024a, 2024/07/02). Different voices, different bodies: presence–absence in the digital university. *Learning, Media and Technology, 49*(3), 388-400. https://doi.org/10.1080/17439884.2022.2150637

Gravett, K. (2024b). Postdigital Relational Pedagogies. In P. Jandrić (Ed.), *Encyclopedia of Postdigital Science and Education* (pp. 1-4). Springer. https://doi.org/ https://doi.org/10.1007/978-3-031-35469-4_83-1

Hopwood, N. (2016). *Professional practice and learning: Times, spaces, bodies, things*. Springer. https://doi.org/10.1007/978-3-319-26164-5_9

Klykken, F. H., & Barendregt, R. (2025). Fostering Data Literacy Through the Delta i Data! Game Package: Teacher Insights. Proceedings of the 19th European Conference on Game-Based Learning: ECGBL. https://doi.org/10.34190/ecgbl.19.1.4091

McEwan, G., Gutwin, C., Mandryk, R. L., & Nacke, L. (2012). "I'm just here to play games": social dynamics and sociality in an online game site. *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work (CSCW '12). Association for Computing Machinery*, 549–558. https://doi.org/10.1145/2145204.2145289

Plass, J. L., Mayer, R. E., & Homer, B. D. (2019). *Handbook of game-based learning*. The MIT Press.

Potočnik, V. (2024). *Designing a tabletop game for fostering meaningful conversations.* Aalto University [Master's Thesis] https://urn.fi/URN:NBN:fi:aalto-202406234662

Reese, C., & Wells, T. (2007). Teaching academic discussion skills with a card game. *Simulation & Gaming*, *38*(4), 546-555. https://doi.org/10.1177/1046878107308063

Simons, H. (2009). *Case Study Research in Practice*. SAGE Publications. https://doi.org/10.4135/9781446268322

SLATE. (2024). *Delta i Data! - The game package*. Center for the Science of Learning and Technology (SLATE), University of Bergen. Retrieved 13.11.2024 from https://edutrust.slateresearch.ai/game-package-english/

Van Scoy, L. J., Reading, J. M., Scott, A. M., Green, M. J., & Levi, B. H. (2016). Conversation game effectively engages groups of individuals in discussions about death and dying. *Journal of Palliative Medicine, 19*(6), 661-667.

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