

“Ideas are really...” - supporting collaborative dialogues and community of practice for innovation via CO:RE cards

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Abstract

The study explores the affordances of CO:RE Cards in prompting collaborative dialogues surrounding R&D and innovation among creative industry practitioners. The use of CO:RE Cards was evaluated in three sessions within a collaborative dialogue environment. It was analysed that they have prompted the building of a collective language and understanding among creative practitioners through collaborative knowledge construction and mutual learning. We discuss the potentially significant role of CO:RE Cards in nurturing a Community of Practice (CoP) for innovation in the creative industries.

Keywords: user-centred design, design tools, collaborative dialogues, innovation, community of practice

1. Introduction

Card-based tools hold a significant role and value in design due to their effectiveness in bridging practice and theory of design (Deng, 2014). From Charles and Ray Eames' early House of Cards (1952) example to the more recently developed card decks, they have been acknowledged to facilitate the different stages of designing; predominantly the fuzzy front end of the design process. Based on a comprehensive review of 155 design card decks, Roy and Warren (2019) posit that most card-based tools are designed to either stimulate creative thinking, provide information on design methods or outline domain-specific concepts to support design tasks. This proposed classification of the characteristics and purpose of cards based on previous classification efforts (see Wölfel and Merritt, 2013) remains applicable even to recently published decks. Examples include Design x Science Cards developed for the bio-design field (Välk et al., 2021) and Lighting User Experience (LUX) Cards (Choi et al., 2020). The strength of cards as analogue tools to encourage dialogues, mutual learning and collaboration is beneficial in various collaborative and engagement contexts, including co-design sessions (Calvo and Sclater, 2021), design participatory projects and multi-stakeholder co-creation. They allow collaborative experimentation among participants to contribute towards a shared language, aim or goal (Peters et al., 2021). According to Martin and Strengers (2022), when cards are integrated as a conversational tool during group discussions, they uncover the tacit knowledge about a particular subject or topic of participants. Cards can also support the “*sharing of individual mental models in conversational turn-taking*” to facilitate collaborative knowledge integration (Yeoman and Carvalho, 2019 p. 85). Compared to other prompts for collaboration, the gamified element associated with cards can “*invoke a sense of playfulness and purpose through a familiar tactile medium*” (Martin and Strengers, 2022 p. 578). Extending this notion, this study will explore the potential benefits of integrating card-based tools as prompts for discussions on innovation in a collaborative dialogue environment. The authors aim to demonstrate how *CO:RE Cards*, a *CO*llaborative and *RE*flective

deck developed based on Research and Development (R&D) and user-centred design prompts, can be used to encourage collaborative dialogue and shared understanding among non-design practitioners. This is part of an effort to cultivate an improved understanding of the language surrounding R&D and innovation by targeting creative industry practitioners based in Wales who are new to the concept of design-led innovation. It is hypothesised that collaborative dialogues prompted by *CO:RE Cards* may provide opportunities to develop a Community of Practice (CoP) among creative industry practitioners. A CoP is defined as a shared domain of interest pursued by engagements that enable mutual learning with a collective repertoire of resources such as experiences and stories (Wenger, 2011). Our research questions are therefore framed as follows: *How do CO:RE Cards foster collaborative dialogues and a shared understanding among creative industry practitioners? How does this facilitate the process of nurturing a CoP?* By exploring how *CO:RE Cards* can be advantageous in both nurturing a shared understanding of design innovation and a CoP, it is proposed that this study will also address an identified gap in the literature where there is currently a large, disproportioned landscape of design tools (Peters et al., 2021). On one hand, we are presented with tools with no supporting research, with less than a third of 76 reviewed design tools being validated through published research. On the other hand, we have effective design tools supported by empirical research that are not publicly available or disseminated for practical use. It is suggested that by providing a preliminary evaluation of *CO:RE Cards* and making the deck publicly available (see Appendix A), it will demonstrate how design tools can be used in both design and non-design contexts while benefitting the wider creative community.

2. Theoretical background & related work

2.1. Collaborative dialogues

2.1.1. Meaning construction & mutual learning

One of the key processes of collaboration includes dialogues, a focused interaction that “*challenges participants to find coherence in diverse ideas, plans and tactics*” to coordinate the collective and collaborative efforts built (Salmons and Wilson, 2019 p.15). Collaborative dialogues have been identified as an effective practice to construct knowledge and solve problems (Swain, 2000) since they involve different dialogical patterns such as educating, inquiring, and practising (Melander et al., 2022). These patterns allow the knowledge creation within a dialogic process to be “*relational, fluid and changeable in its making*” (Anderson, 2014 p. 64). This practice of “*learning as meaning-making*” involves an active engagement of participants in the interpretation of situations, events, or dialogues, based on their knowledge, experience, identity, or emotion (Seel, 2011 p. 1809). More importantly, the socially constructed meaning-making process in dialogues builds upon the shared inquiry of understanding each other’s perspectives and views (Anderson, 2014). By “*interrogating, and sharing one’s descriptions of the world,*” effective mutual learning can be achieved (Sharples, 2002). Interpretations that emerge from participating collaborators can vary based on different factors and contexts related to individual insights. These encourage a collaborative construction and negotiation of shared meaning and understanding among dialogue participants.

2.1.2. Collaborative dialogues in User-Centred Design

Such collaborative constructions of shared understanding among different actors are synonymous with the nature of the User-Centred Design (UCD) field. A UCD approach operates based on the interactions between designers, users, or stakeholders to mutually build on each other’s knowledge and expertise to negotiate meanings and address challenges. UCD tools such as prototyping, stakeholder mapping, user journey mapping and personas are used to collaboratively trigger discussions and facilitate conversations (Giordano et al., 2018) in a variety of contexts including co-design sessions and participatory projects. In a design project, for example, user-centred designers utilize such tools to help them quickly grasp the project’s challenges or recognise the involved stakeholders’ perspectives so they can shape the next R&D steps. We argue that this rapid articulation via collaborative dialogues is applicable and valuable to non-design practice to encourage non-designers to learn more about the value

of dialogues in innovation. By adding the use of material structures or prompts for collaborative dialogues such as *CO:RE Cards*, participants will experience a shared imagination space that will effectively aid the meaning-making process and retention of memories of the interactions that took place; therefore, leading towards a co-construction of a shared understanding (Ball et al., 2021). The use of *CO:RE Cards* is also intended for non-designers to replicate how designers engage in dialogues in constructing collaborative knowledge in R&D and innovation.

2.2. Towards a Community of Practice (CoP) for innovation

The concept of collaboration and mutual learning is intrinsically embedded in the theory of CoP, and it relates to the value of participation that it brings to its members. Three dimensions which distinguish it from a community of interest, a network, or a collective group are mutual engagement, joint enterprise and shared repertoire (Wenger, 1998). These dimensions illuminate how a CoP is bound together as an entity with a shared aim of achieving goals among those passionate about expanding their knowledge and expertise through continuous member interactions. As opposed to a network, a CoP has an identity, can emerge for a set purpose and is more than just the membership or the relationship built. It is defined by knowledge rather than task. Wenger (1998, p. 229) states that it is “*about learning as a living experience of negotiating meaning.*” The active learning and knowledge construction environment that CoP brings can support innovation (Goodyear and Casey, 2015). Innovative capabilities may also be enabled by CoPs as they serve as situated platforms and dispersed collaborative environments that encourage learning for innovation (Pattinson et al., 2016). Proper collaborative and mutual learning strategies can support and foster the enrichment of design, ideas, and innovation (Nilsson et al., 2022) that can be applied to both large organisations and SMEs (Pattinson and Preece, 2014). The knowledge construction concept in CoPs relates closely to situated learning theory where learning is “*situated in authentic practice contexts*” (Hoadley, 2012 p. 290). A situated learning experience is a social phenomenon which is unintentional and informal and involves complex interactions with its surroundings (Calvo and Sclater, 2021). Despite the variety of CoP, they are fundamentally structured on a common ground of knowledge and mutual respect to develop a shared practice based on a set of frameworks, ideas and tools that may effectively benefit their domain (Wenger, 1998). In distinguishing the different forms that a CoP can take, this study adopts Komorowski et al.'s (2018) physical instead of virtual communities of practice in which a physical CoP is “*formed through physical events, where members regularly meet such as workshops, networking events, meetings*” (p. 3). In the present study, the exploration of how card-based tools can encourage discussions that may lead to a CoP is designed in a physical intervention that reflects real-world context, as such authentic environments may positively affect the situated learning experience of members. Further discussion is under Section 3.1.

3. Methodology

3.1. Collaborative dialogue sessions using CO:RE Cards

The planning and execution of the space or materials for a collaborative environment is crucial to ensure an effective CoP within a physical setting. Three evaluation sessions were conducted to test the effectiveness of *CO:RE Cards* designed within *PDR & CO:RE* events. These series of thematic events conducted by PDR (<https://www.pdr-design.com>) brought together creative industry practitioners based in Wales as an initiative to support networking and long-term collaboration. Exclusively catered to the cohorts of *Media Cymru's* R&D support programmes (Media Cymru, n.d.), participants were provided with a space to connect during a sharing session conducted by invited creative practitioners who touched on topics closely related to innovation and R&D. *CO:RE Cards* were then used in an informal get-together to support situated learning that involves unintentional and complex interactions with the surroundings (Calvo and Sclater, 2021). In each session, a group of 3-6 practitioners sat together to play the cards with minimal facilitation to allow them to be comfortable and lead their discussions. Each session was about 20-30 minutes with a flexible option for a natural conclusion to support an organic flow of discussions among the participants.

3.2. Development of CO:RE cards

CO:RE Cards could ignite a discussion exploring different perspectives on subjects, terminologies and topics related to R&D and innovation. A brainstorming session amongst experienced design innovation facilitators was held to develop the contents of the cards. Different types of discussion prompts were used to see how participants collaboratively interacted, articulated their understanding, and shared their knowledge. The prompts used were based on phrases or keywords used by non-design practitioners that were collected from previous PDR support programmes. We identified misunderstanding of innovation and R&D terminologies among non-designers as a common reason that has hindered innovation for SMEs and freelancers in non-design industries. These were the phrases and keywords included in *CO:RE Cards* to prompt critical discussions among creative industry practitioners.

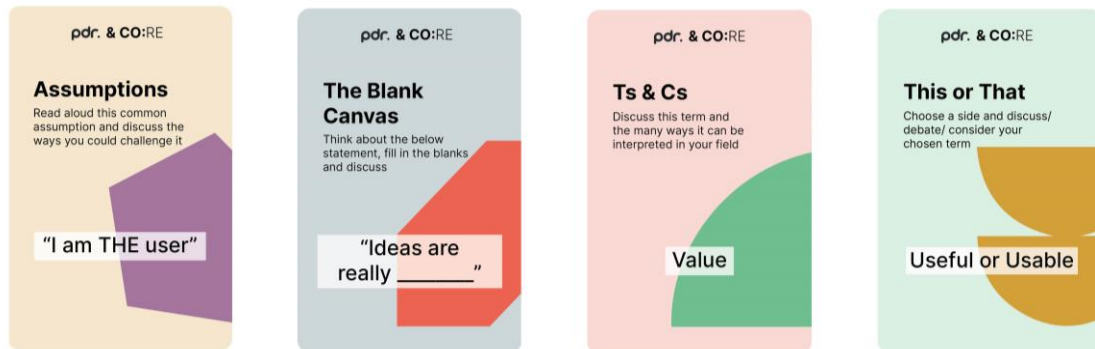


Figure 1. Four categories in the CO:RE Cards deck

Figure 1 shows the four categories of prompts in the *CO:RE Cards* deck. In the prototype, the four categories carry a total of five cards each. The categories represent different prompts for discussion:

- Assumptions:** This category contains the common assumptions surrounding innovation or R&D. Participants are to discuss and articulate in what ways these assumptions are relevant to their personal practice, experience, and background.
- The Blank Canvas:** This category allows different perspectives and ideas for participants to complete a statement relating to innovation and R&D. The understanding of words, phrases, or any clue present in the incomplete statement may stem from their experience or background.
- Ts & Cs:** This is an interplay of common terminologies and conditions surrounding innovative practices, innovation and UCD experiences with clients and users. This one-word game allows participants to discuss various interpretations for re-defining or co-defining common terms or re-learning basic terminology.
- This or That:** Although set up for participants to choose between two opposite choices, this may not always be the case. It opens an opportunity for critical discussion about the order of importance or negligence of necessary elements needed in a project or process, and whether it is wise to choose between the two choices given. This game's format is inclined towards a debate session.

3.3. Data collection & analysis methods

3.3.1. Evaluation and feedback of CO:RE Cards

A pilot usability test was conducted with product designers and design researchers before the three A-C evaluation sessions. This test provided a first insight into how *CO:RE Cards* were used in a collaborative discussion setting. Useful data on discussion format, chosen style of gameplay, estimated time for one round of play, and level of facilitation required for discussion were gathered to inform sessions A-C. This feedback formed an important part of the cards' design iterations and was compiled by a team of user researchers through affinity mapping on Miro. The fluid nature of *CO:RE Cards* allows the deck to be used in several different ways. The deck can be divided based on its four categories, randomly shuffled, or just played as a single deck, with all cards faced down. The lack of explicit

instructions on how to use the cards was intentional to allow participants the freedom and control of the dialogues. As shown in Figure 2, the turn-taking format was chosen in one of the card-play sessions.



Figure 2. Collaborative discussion in action using CO:RE Cards

Sessions A-C were conducted in *PDR & CO:RE* as outlined in Section 3.1. Non-participatory observation and usability testing were concurrently conducted to analyse the interactions using the cards, and verbatim text notes of the conversations between participants during the card play were recorded. After each session, feedback and opinions of the interactions were gathered from participants through informal discussions. Feedback from Sessions A and B was used for the iteration and development of a refined version of Session C. The new deck for Session C was iterated in terms of its visual design, and phrasing of instructions for better legibility and clarity. An addition of five new cards was designed for each category. For this paper, the outcomes of the usability testing and the technicalities of the card design will not be reported. Our findings will focus on the content of the cards, that is, how collaborative dialogues developed using *CO:RE Cards* and how these support the emergence of a CoP for innovation.

3.3.2. Methods of analysis

Verbatim quotes from participants ($n = 12$) were captured as data during the non-participatory observation conducted during all card-play sessions (Sessions A, B, C). Discussions in each session lasted between 15-30 minutes and provided us with three separate transcripts. The method of generating data from informal or natural conversations was chosen as it was intended to be a powerful method of getting an in-depth understanding of a participant's reality, including their "*experiences, values and perceptions*" (Swain and King, 2022 p.8). This flexible method provides a great range of possibilities which allows the analysis of the conversations and meaningful interactions in their authentic settings. Braun and Clarke's (2006) reflexive thematic analysis and inductive coding were used as the method of analysis to generate patterns and themes that emerge from the three transcripts. The themes described the interactions that occurred between participants during their collaborative dialogues that were prompted by *CO:RE Cards*. To maintain the anonymity of participants in discussing the results, participants will be coded as P1, P2 or P3, with P1 for Participant 1, P2 for Participant 2 and so forth.

4. Results & discussion

The data analysis revealed two major themes in the collaborative dialogues. Excerpts of transcripts from the recordings captured during the card-playing sessions A-C are included. Results show that *CO:RE Cards* prompted tacit knowledge sharing including personal and professional experiences. These support the development of the Community of Practice (CoP) among creative industry practitioners. The collective knowledge generated includes collaborative meaning-making, mutual learning, and knowledge exchange. The following sections discuss the value and role of tacit knowledge sharing and collective knowledge building in CoP for innovation.

4.1. Tacit knowledge sharing

4.1.1. Personal insights

Personal insights were discussed among participants during the card-playing sessions, spanning from personal and lived experiences to opinions and ideas (P3, P11, P12). The dialogues included meaningful conversations as participants were open to sharing their personal stories and experiences relating to childhood memories and family background (P1 and P2), learning differences (P6) as well as physical and mental well-being as freelancers (P1 and P7). These narratives were mostly used as supporting examples to elaborate and provide context to their articulated ideas, opinions, and perspectives in discussing a particular subject. It was found that the occurrence of deeper, more meaningful conversations surfaced when participants built on each other's narratives to expand the dialogue. For example, in discussing the *Perfect OR Timely* card from the *This OR That* deck, participants collectively reflected on how these terms relate to their working styles and personal ways of doing things (P3, P4 and P6). P5 stated that they would “go for perfect, but then would probably end up with something in between”. This was followed by P1's sharing of their team's past struggles of “focus(ing) for too long” which “don't ever really get anything out (of it)” has made them “constantly stressing (that) it's got to be right”. The collective reflection moved on into a much deeper conversation, where P1's sharing prompted P4 to share their similar struggles and stress of working with a “timely” person, which at times contradicted P4's quality standards of creative works. Their continued elaboration of how this could be positively viewed as “a productive tension” then led other participants to share about working with “perfectionists” and how this could be both challenging and beneficial to their practice (P1 and P6). Other personal struggles, obstacles and failures faced were also shared in the collaborative dialogues, including stories of how their innovation and R&D journey has affected their personal lives. Examples include stories relating to the constant pressure to innovate and pitch new ideas as a way to sustain (P5), challenges and failures in their small business development (P2) and the difficulties in bringing their ideas out to the market (P10). The cards have also prompted participants to voice out strong opinions and personal stands on certain subjects. For example, common misconceptions relating to innovative approaches were included as part of the deck to spark conversation. In discussing the term *Diverse from* the *Ts & Cs* deck, P9's opinion that the term has been appropriated in different industries until “they become meaningless” resonated with P8's view:

“(Diverse) has been sort of watered down. I think it's been tried and tested in so many ways to the point where it's like - can we just not use this term anymore? Because it seems so big yet so meaningless because of how we use it, and it doesn't represent much nowadays.”

In another example, the card “*People will buy this*” from the *Assumptions* deck has stimulated a range of personal opinions that uncover a spectrum of differing perspectives on the same subject. P4 believes that “a lot of things in the world don't really need to exist” and that “people just don't need it”. This was contested by P1's opinion:

“Sometimes stuff is created without people needing or wanting it, but you make it in a way to convince them that they need it and want it”.

P7 then offered their perspective on the debated assumption:

“What we need in life is why we need storytelling.. to create desire... I'm buying into something rather than buying something.. that means I'm buying into the philosophy of doing something.”

4.1.2. Professional & industry experience

In several instances of expanding the dialogues, participants would articulate their perspectives on subjects by drawing examples from their professional experiences. This could be an introduction of their field of work to others, which could be a broad reference to their practice or an elaboration of their specific fields in the creative industry (P3, P4, P7, P8, P9, P12). They also referenced their organisation's

purpose, framework, and approach (P3), and previous field of study (P2). For example, P9 explained the term *Dynamic* from the *Ts & Cs* deck based on their field of work:

“(In my field) the people can be dynamic... You can bring positive energy to a situation where the things you’re making can be dynamic, in a sense. It might be things that move, or they could be things that don’t make waves.”

This was followed by P8’s sharing of how the same term would relate to their field of study and industry. In other cases, participants provided examples that draw upon their experiences of organising creative events such as community projects (P2), open markets (P1) and campaigns (P8). Their narratives provided good examples of tacit knowledge, where they share valuable details that could only be told by those who have experienced the process. In one of the dialogues, P1, P2 and P4 shared experiences and details relating to the planning, structuring, and running of creative events. P1’s take on the *“Nobody has done this before”* (*Assumptions* deck) was stated as:

“I don’t think anything has never been done before...but it is putting it from a different perspective.... There have been accessible events (in the past)... but what I’m creating might suit someone else more than those events...”

This was continued with a detailed sharing of how they organised events catering to accessibility that might be different from others. Other dialogues touched on a variety of work-related examples to articulate their perspectives including participants’ involvement in digital content creation (P6), theatre production (P4) and television production (P7).

4.2. Collective knowledge building

4.2.1. Collaborative meaning-making

In discussing the terminologies surrounding innovation and R&D, it was found that participants experienced a collaborative meaning-making process to build a mutual understanding. They tapped into different interpretations and elaborations of a subject to engage in a collective knowledge-building process. An example can be seen in both the discussions surrounding the cards *“Nobody has done this before”* (*Assumptions* deck) and *“Ideas are really__”* (*The Blank Canvas* deck), where participants collectively scrutinized the term “new ideas”. Participants believed that there is no such thing as new or original ideas, but it is about doing it in a different way or approach (P7 and P2), evolving and expanding existing ideas through testing (P8) and *“get(ing) informed about what everyone else has done and respond to that”* (P1). Like the term *Iteration* (*Ts & Cs* deck), participants contributed their share of meanings: P2 referred to it as a cycle of tests, P3 considered it as the reinterpretation of ideas based on discoveries after testing and P1 reflected it as learning, evolving, and embracing change. It was also found that in the co-creation of shared meanings, apart from offering individual interpretations, participants also built on each other’s interpretation and elaboration to support the proposed shared meaning. For instance, in discussing the terms Equality, Diversity and Inclusion (ED&I), P2 offered a supporting example to agree with P3’s elaboration of the term’s meaning.

4.2.2. Mutual learning & knowledge exchange

When participants presented field-specific knowledge or explicit knowledge relating to new technologies, storytelling formats or other subjects, these narratives were found to encourage knowledge exchange and mutual learning among participants. These narratives stemmed from various knowledge resources, which can be derived from their conversations with others, their reading or learning from a range of available media resources. *CO:RE Cards* prompted the sharing of information on various topics such as music algorithms, visual triggers, and technical elements of music (P6), social experiments on digital platforms (P1) and cultural perspectives of music for film productions (P3). In discussing *Uncertainty or Control* (*This or That* deck), P2 shared information about the benefits of cooperatives as a good example of a business with balanced control. In elaborating on an example for the card *“It has to be bespoke”* (*Assumptions* deck), P8 shared with the group information about the requirements of conducting research with young children. One of the ways to determine the occurrence of mutual

learning in these knowledge exchange processes was by the follow-up responses of other participants. It was identified that other participants would enquire for further clarifications or explanations to better understand the information given to them and acknowledge each other's domain of knowledge.

4.3. Identified opportunities: (CoP) for innovation in the creative industries

The above results highlighted *CO:RE Cards*' potential in facilitating collaborative dialogues to support the development of a CoP among creative industry practitioners. In discussing the opportunities for nurturing a CoP for innovation, we previously referred to Wenger's (2011) three main characteristics of a CoP, namely, domain, community, and practice. Firstly, a CoP is defined by the shared domain of interest "*underpinned by a shared meaning and understanding*" among the members (Khuzaimah, and Hassan, 2012 p. 347). Using the *CO:RE Cards* prompts, participants experienced the process of personal and collective meaning-making, interpretation, and elaboration that nurtured a collective and shared understanding among them. As "*a collective language is likely to emerge*" (Jacobs and Heracleous, 2005 p. 347), the conversational and reflective nature of collaborative dialogues allowed a critical review and inquiry of both the individual and collective assumptions.

This emergence of a 'collective language' and mutual understanding was fostered through several knowledge resources that spanned from tacit to explicit. This addresses the second characteristic of a CoP as a practice that develops "*a shared repertoire of resources*" such as "*experiences, stories and tools*" as valuable knowledge resources (Wenger, 2011 p. 2). Personal experiences, ideas, perspectives, and opinions that were shared in the collaborative dialogues are forms of tacit knowledge that are valuable in impacting triggering and influencing "*the formation of more opinions and ideas generation between individuals*" (El-Den and Sriratanaviriyakul, 2019 p. 25). This suggests that such knowledge sharing is valuable in both the formation of CoP and the nurturing of innovative practices. The mutual learning and knowledge exchange components that are embedded in the collaborative dialogues prompted by *CO:RE Cards* align with the CoPs concept of learning, where it is "*associated with our evolving social relationships with others in the group through multiple relational processes*" (Wilson-Mah et al., 2022). For instance, when participants were prompted with phrases or words that they were not sure of, they collaboratively explored the meaning together. The 'joined-up uncertainties' that occurred between them are important in mutual learning; a benefit that would not be as apparent in other forms of facilitated or formal discussions.

This social learning component connects to the third *community* characteristic of CoP. The community element of mutual trust and respect in CoP is the foundational basis that allows the practice of mutual learning among members. Meaningful narratives that were shared around personal experiences, opinions, interpretations, and perceptions were not only relevant to the subject but were found to be relatable among the dialogue members. Personal stories that draw on participants' family backgrounds, lived experiences, personal struggles and challenges as creatives were also shared in the collaborative dialogue environment. Hence, the collaborative dialogue environment structured within *PDR & CO:RE* acts as a shared and "safe space" that nurtures a sense of belonging, mutual trust, and respect among participating members. Trust-building is an important factor in building a CoP, and we propose that the use of *CO:RE Cards* in such dialogue environments is one of the key factors that would enable the emergence of a CoP. By addressing the three characteristics that distinguish the development of a CoP, it is argued that *CO:RE Cards* hold an important role in nurturing innovation for the creative industries because interactions that occur could lead to the emergence of a potential CoP among the creative practitioners involved. In the context of the present study, creative practitioners were brought together in *PDR & CO:RE* to nurture continuous engagement and collaboration for the developed knowledge network. It is through such collaborative environments that allow learning for innovation, and enable innovative capabilities among participants (Pattinson et al., 2016). Furthermore, CoPs' focus on knowledge rather than task is the key that supports and encourages innovative capabilities among its participating members (Goodyear and Casey, 2015). From PDR's years of experience in supporting innovation in the creative industries through consultations, co-creation facilitation and training, the sessions with *CO:RE Cards* have informed us about a rapid method of encouraging effective collaborative interactions that surround innovation on demand.

5. Conclusion

In this study, we have presented the preliminary and exploratory evaluation of *CO:RE Cards* to encourage collaboration and a shared understanding among non-design practitioners. We have designed the deck to include prompts around R&D and innovation to cultivate a collaborative dialogue that could improve the understanding of the ‘language’ surrounding design-led innovation. Our findings have demonstrated that, in building a mutual and shared understanding among participants about R&D and innovation-related subjects, several processes that nurture a CoP were prompted by the collaborative dialogues built. Collaborative dialogues using *CO:RE Cards* have been found to prompt tacit knowledge sharing, collective knowledge building, mutual learning and collaborative meaning-making that address the required elements to form a CoP. We conclude that to address the required elements that shape the building and development of a CoP, *CO:RE Cards* play a potentially significant role in nurturing innovation in the creative industries.

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References

- Anderson, H. (2014), “Collaborative-dialogue based research as everyday practice: Questioning our myths”, *Systemic inquiry: Innovations in reflexive practice research*, Everything is Connected Press, Farnhill, pp.60-73.
- Ball, L.J., Christensen, B.T. and Halskov, K. (2021), “Sticky notes as a kind of design material: How sticky notes support design cognition and design collaboration”, *Design Studies*, Vol. 76, p. 101034. <https://doi.org/10.1016/j.destud.2021.101034>
- Braun, V. and Clarke, V. (2006), “Using thematic analysis in psychology”, *Qualitative Research in Psychology*, Vol. 3 No. 2, pp. 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Calvo, M. and Sclater, M. (2021), “Creating spaces for collaboration in community co-design”, *International Journal of Art & Design Education*, Vol. 40 No. 1, pp. 232–250. <https://doi.org/10.1111/jade.12349>
- Castaneda, D.I. and Cuellar, S. (2020), “Knowledge sharing and innovation: A systematic review”, *Knowledge and Process Management*, Vol. 27 No. 3, pp. 159–173. <https://doi.org/10.1002/kpm.1637>
- Choi, K., Kim, T. and Suk, H.-J. (2020), “Lighting user experience (LUX) cards: A card-based tool for the design of Smart Lighting Solutions”, *Archives of Design Research*, Vol. 33 No. 1, pp. 55–65. <http://dx.doi.org/10.15187/adr.2020.02.33.1.55>
- Deng, Y., Antle, A.N. and Neustaedter, C. (2014), “Tango cards”, Proceedings of the 2014 Conference on Designing Interactive Systems, available at: <http://doi.org/10.1145/2598510.2598601>
- El-Den, J. and Sriratanaviriyakul, N. (2019), “The role of opinions and ideas as types of tacit knowledge”, *Procedia Computer Science*, Vol. 161, pp. 23–31. <https://doi.org/10.1016/j.procs.2019.11.095>
- Giordano, F.B., Morelli, N., De Götzen, A. and Hunziker, J. (2018), “The stakeholder map: A conversation tool for designing people-led public services”, *In Service Design and Innovation Conference: Proof of Concept. Linköping University Electronic Press*. <http://www.servdes.org/wp/wp-content/uploads/2018/07/48.pdf>
- Goodyear, V.A. and Casey, A. (2015), “Innovation with change: Developing a community of practice to help teachers move beyond the ‘honeymoon’ of pedagogical renovation”, *Physical education and sport pedagogy*, 20(2), pp.186-203. <https://doi.org/10.1080/17408989.2013.817012>
- Hoadley, C. (2012), “What is a community of practice and how can we support it?”, *Theoretical foundations of learning environments*, 286. <https://doi.org/10.4324/9780203813799>
- Jacobs, C.D. and Heracleous, L.T. (2005), “Answers for questions to come: reflective dialogue as an enabler of strategic innovation”, *Journal of Organizational Change Management*, 18(4), pp.338-352. <https://doi.org/10.1108/09534810510607047>
- Khuzaimah, K.H.M. and Hassan, F. (2012), “Uncovering tacit knowledge in construction industry: Communities of practice approach”, *Procedia-Social and Behavioral Sciences*, 50, pp.343-349. <https://doi.org/10.1016/j.sbspro.2012.08.039>
- Komorowski, M., Do Huu, T. and Deligiannis, N. (2018), “Twitter data analysis for studying communities of practice in the media industry”, *Telematics and Informatics*, 35(1), pp.195-212. <https://doi.org/10.1016/j.tele.2017.11.001>

- Martin, R. and Strengers, Y. (2022), "Playing games with the weather: A card game method for engaging households in conversations about renewable energy generation and everyday practice", *Geographical Research*, 60(4), pp.575-588. <https://doi.org/10.1111/1745-5871.12547>
- Melander, A., Mullern, T., Andersson, D., Elgh, F. and Löfving, M. (2022), "Bridging the knowledge gap in collaborative research—in dialogues we trust", *Systemic Practice and Action Research*, 35(5), pp.655-677. <https://doi.org/10.1007/s11213-021-09589-2>
- Media Cymru. (n.d.), *Leading Media Innovation in Wales*. Available at: <https://media.cymru> (Accessed: 15 October 2023).
- Nilsson, S., Kasamani, B.S., Mortensen, J.H., Stevanovic, D., Wanyang, M., Bergendahl, M.N. and Papalambros, P.Y. (2022), "Challenges and Opportunities for Enabling Mutual Learning and Collaboration in Design and Innovation for Sustainable Development in Africa and Beyond", *Proceedings of the Design Society*, 2, pp.1071-1080. <https://doi.org/10.1017/pds.2022.109>
- Pattinson, S. and Preece, D. (2014), "Communities of practice, knowledge acquisition and innovation: a case study of science-based SMEs", *Journal of Knowledge Management*, 18(1), pp.107-120. <https://doi.org/10.1108/JKM-05-2013-0168>
- Pattinson, S., Preece, D. and Dawson, P. (2016), "In search of innovative capabilities of communities of practice: A systematic review and typology for future research", *Management Learning*, 47(5), pp.506-524. <https://doi.org/10.1177/1350507616646698>
- Peters, D., Loke, L. and Ahmadpour, N. (2021), "Toolkits, cards and games—a review of analogue tools for collaborative ideation", *CoDesign*, 17(4), pp.410-434. <https://doi.org/10.1080/15710882.2020.1715444>
- PDR (n.d.), "A world leading design consultancy and applied research facility", Available at: <https://www.pdr-design.com> (Accessed: 1 February 2024).
- Roy, R. and Warren, J.P. (2019), "Card-based design tools: A review and analysis of 155 card decks for designers and designing", *Design Studies*, 63, pp.125-154. <https://doi.org/10.1016/j.destud.2019.04.002>
- Salmons, J. and Wilson, L.A. (2019), "Learning to collaborate, collaborating to learn: Engaging students in the classroom and online", *Routledge*. <https://doi.org/10.4324/9781003445708>
- Seel, N.M. ed. (2011), "Encyclopedia of the Sciences of Learning", *Springer Science & Business Media*. <https://doi.org/10.1007/978-1-4419-1428-6>
- Sharples, M. (2002), "Disruptive devices: mobile technology for conversational learning", *International Journal of Continuing Engineering Education and Life Long Learning*, 12(5-6), pp.504-520. <https://doi.org/10.1504/IJCEELL.2002.002148>
- Swain, M. (2000), "The output hypothesis and beyond: Mediating acquisition through collaborative dialogue", *Sociocultural theory and second language learning*, Oxford, Oxford University Press, 97(1), pp.97-114.
- Swain, J., & King, B. (2022), "Using Informal Conversations in Qualitative Research", *International Journal of Qualitative Methods*, 21. <https://doi.org/10.1177/16094069221085056>
- Välk, S., Chen, Y. and Mougnot, C. (2021), "Towards a Designerly Way of Thinking for Bioengineers with 'Design and Science' Cards", *In Congress of the International Association of Societies of Design Research*, Springer Nature Singapore, Singapore, pp. 1691-1704. https://doi.org/10.1007/978-981-19-4472-7_110
- Wenger, E. (2011), "Communities of practice: A brief introduction", <http://hdl.handle.net/1794/11736>
- Wenger, E. (1998), "Communities of Practice: Learning, Meaning, and Identity", *Learning in Doing: Social, Cognitive and Computational Perspectives*, Cambridge, Cambridge University Press. <https://doi.org/10.1017/CBO9780511803932>
- Wilson-Mah, R., Axe, J., Childs, E., Hamilton, D. and Palahicky, S. (2022), "A Collaborative Self-Study: Reflections on Convening a SoTL Community of Practice", *International Journal for the Scholarship of Teaching and Learning*, 16(2), p.4. <https://doi.org/10.20429/ijstl.2022.160204>
- Wölfel, C. and Merritt, T. (2013), "Method card design dimensions: A survey of card-based design tools", *In Human-Computer Interaction—INTERACT 2013: 14th IFIP TC 13 International Conference*, Cape Town, South Africa, September 2-6, 2013, Proceedings, Part I 14 (pp. 479-486). Springer, Berlin Heidelberg. https://doi.org/10.1007/978-3-642-40483-2_34
- Yeoman, P. and Carvalho, L. (2019), "Moving between material and conceptual structure: Developing a card-based method to support design for learning", *Design Studies*, 64, pp.64-89. <https://doi.org/10.1016/j.destud.2019.05.003>

Appendix A

Full access to the digital version of the *CO:RE Cards* deck will be made available at www.pdr-design.com. Please get in touch with the corresponding author to access a digital copy or a physical deck of *CO:RE Cards*.