Community listening sessions: an approach for facilitating collective reflection on environmental learning and behavior in everyday life

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ABSTRACT
Collaborative research approaches can promote social learning by curating a structure that facilitates inclusive dialogue and reflection. Within an epistemological frame that upholds notions of emergence rather than extraction, such modes can foster collective reflection in ways that contribute to reversing traditional notions of expertise. In this paper, we describe ‘Community Listening Sessions’, an approach drawing on focus group, learning circle, and participatory research literature. We developed Community Listening Sessions to study the interactional contexts of environmental learning – an inherently social, collective process. In our initial application, through 14 listening sessions hosted across the San Francisco Bay Area (California, USA), we engaged more than 100 community members in discussing how they learn about and take action related to the environment in their daily lives. We make recommendations for future use of Community Listening Sessions for collecting qualitative data in a participatory, equitable way in what can be challenging, high-social-cost discussions, yet those that are critical for addressing issues such as climate change, biodiversity loss, socio-environmental justice, and others that are essential to the future of our species and planet.

Introduction
The need for individuals and communities to learn about, develop skills, and take action related to the planet’s environmental challenges is increasingly urgent. Theorically oriented studies and practitioners working in the environmental field have suggested for decades that people learn about the environment not only in formal settings (e.g. schools), but also – and perhaps primarily – in informal, community-based settings, such as neighborhoods, libraries, and parks (Dierking and Falk 2009; National Research Council (NRC) 2009; Reid and Liu 2020; Ardoin and Heilmich 2021). Yet, studies that examine how, when, where, and why people learn about the environment beyond their school-aged years are relatively few.

To better study these complex everyday-life settings and interactions, we developed a research approach we term ‘Community Listening Sessions’ (CLS). We designed CLS, which are modified focus groups, to understand environmental learning and engagement from an embedded ‘day-in-the-life’ perspective. The CLS approach emphasizes social learning that can emerge from a group discussion. Although the group context is the strength of focus group-type designs (Patton 2002), the CLS move beyond what is typical in focus groups to capitalize on conversation and interaction. CLS thus highlight and reflect the shared nature of environmental concerns rather than unintentionally reinforcing the narrative of an individualistic approach to collective challenges (Ardoin, Bowers, and Wheaton, 2022; Ferreira 2019).

In this paper, we discuss the theoretical underpinnings that guided the CLS development. We then describe the session structure and how we worked to maintain a supportive, open atmosphere, a core attribute of the approach designed with notions of equity and inclusion at the forefront. We end with recommendations for future implementation.

Theoretical underpinnings
Our sociocultural theoretical perspective (Vygotsky 1978; Rogoff 1990, 2014; Lave and Wenger 1991) motivated our interest in social context and interactions (Vygotsky 1978; Rogoff 1990, 2014; Lave and Wenger 1991; Gould et al. 2018a). Sociocultural learning theory emphasizes that learning is a social process and that our interactions with one another, embedded within our sociocultural context, continually influence our thoughts, actions, and perceptions of ourselves as well as of the world around us (Vygotsky 1978). We therefore designed the CLS
with three primary aims: (1) center participants’ everyday-life environmentally related experiences and learning (individual and collective, intentional and unintentional); (2) leverage the affordances of dialogic group processes and support sharing, challenging, and, occasionally, subsequently modifying opinions (Wilson 1997; Melgar Alcantud et al. 2021); and (3) interactively gather perspectives from a large number and diversity of participants (Table 1).

The theoretical underpinnings of CLS are rooted in three concepts: focus groups, learning circles, and participatory research (see Figure 1).

As with focus groups, we sought to encourage conversation around a particular topic and support interaction of ideas among participants (Gilbert 2008). Focus groups are an important research method in numerous fields, including psychology, sociology, anthropology, and many others. (See Appendix for examples.) They encourage discourse, promote efficient and effective group talk, and, perhaps most importantly for many of the issues addressed in socio-environmental research, recognize and honor that learning and decision-making occur within a sociocultural context (Vygotsky 1978; Lave and Wenger 1991; Rogoff 1994). When designed and implemented well, focus groups can provide the opportunity for researchers to observe firsthand social learning occurring in vivo (Johnson 1996; Bloor et al. 2001).

Researchers have, however, noted challenges regarding participant interaction in focus groups (Patton 2002; Rodriguez et al. 2011; Belzile and Öberg 2012). Some note that focus groups are primarily group interviews that rarely support direct interactions and conversations among participants (Madriz 2000; Patton 2002). Rather, while focus groups provide the opportunity for participants to hear each other’s perspectives, they are not designed to allow for dynamic reconsideration of ideas. This can be particularly challenging when researchers aim to honor and encourage diverse perspectives (Rodriguez et al. 2011). Given that interpersonal phenomena are important avenues to gaining insight and understanding into embedded social phenomena, we sought to modify conventional focus group design to support further, and more meaningful, participant interaction.

This desire to encourage interpersonal interaction and thus allow for social learning led us to learning circles. Learning circles are collaborative experiences wherein participants learn with and from each other (Wade and Hammick 1999; Konisky and Beierle 2001). Initially designed as a form of professional development in the business world (Ishikawa 1982), learning circles have become increasingly common in public health, agriculture, international development, and education, among other areas (cf., Oliver 1987; Collay et al. 1998; Wade and Hammick 1999). Also called “study circles” in the adult education literature, they aim to build community, support personal growth, and encourage civic engagement by foregrounding collective meaning-making (Oliver 1987, 1990).

CLS differ from learning circles in two main ways. First, they are designed with theoretical underpinnings – drawing on sociocultural learning theory (Vygotsky 1978; Rogoff 1994). Second, whereas learning circles primarily aim to foster multi-directional learning and relationship-building (Oliver 1990; Collay et al. 1998; Konisky and Beierle 2001), CLS add to these purposes an explicit data collection goal.

The ethos of participatory research also strongly influences CLS, with a primary intention of centering participant voice and experience (Reed et al. 2018; Chevalier and Buckles 2019). As in much

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### Table 1. Core characteristics of the community listening sessions.

| Characteristic | Intention/purpose | Theoretical underpinnings |
|---------------|------------------|---------------------------|
| **Session Planning** | | |
| Collaborate with community partners on planning and implementation | Ensure sensitivity to community desires and preferences. | Participatory research: e.g. Reed (2008), Pearson et al. (2018), Reed et al. (2018), Chevalier and Buckles (2019) |
| Allow community partners to choose dates, times, and locations that are convenient and comfortable for participants | Accommodate participants’ busy lives and comfort zones; address socio-cultural sensitivity and maximize place-based relevance, to the extent possible. | Participatory research: e.g. Reed (2008), Reed et al. (2018), Chevalier and Buckles (2019) |
| Convene groups comprised of people who know one another or have worked/played together previously | Create a comfortable environment of shared experience to facilitate authentic conversation. | Focus groups: Johnson (1996), Bloor et al. (2001) |
| **Session Implementation** | | |
| Arrange chairs in a circle or around a shared table | Reduce hierarchy and power differentials. | Learning (study) circles: e.g. Oliver (1987, 1990), Collay et al. (1998), Wade and Hammick (1999) |
| Invite community partners to help with facilitation as appropriate | Deepen collaboration with partners and increase chance that conversation is relevant for participants and partner organizations. | Participatory research: e.g. Reed (2008), Reed et al. (2018), Chevalier and Buckles (2019) |
| Tailor details to socio-cultural and place-based context – e.g. provide culturally appropriate, locally sourced food | Create a familiar, comfortable atmosphere for participants, respectful of local context. | Participatory research: e.g. Rodriguez et al. (2011); Learning (study) circles: e.g. Oliver (1987, 1990), Collay et al. (1998), Wade and Hammick (1999) |
participatory research, the CLS were partly motivated by questions derived from, and intended to contribute to on-the-ground practice. They also emphasize discursive approaches that leverage the everyday lived experiences of participants and the unique, place-based nature of partner organizations (Reed 2008; Chevalier and Buckles 2019; Sprague et al. 2021).

Combining elements of these theoretical underpinnings, an important goal of the CLS was an atmosphere that nurtured conversation among equal participants, encouraged the exchange of ideas, and supported mutual learning. We worked with community partners to foster a dialogical tone, cultivating notions of emergence rather than extraction (Mason-Bish 2019; Melgar Alcantud et al. 2021). We designed the CLS to encourage participants to share about, reflect on, and collaboratively make meaning from their everyday lived experiences.

**Community listening session process**

Through our initial instantiation of CLS, we explored participants’ place and community connections, barriers and motivators for environmental stewardship actions, and whether and to what extent they described pursuing opportunities to learn about the environment in the course of their everyday lives. This data collection was part of a mixed-methods study on environmental learning. (See Gould et al. 2018a; Wojcik et al. 2021.)

*Location:* We implemented the CLS in the San Francisco Bay Area, California, USA. (For details see Appendix.)

*Collaborators:* We co-organized each session with local partners (e.g. nonprofit organizations, community centers, museums), who served as hosts to facilitate inclusion of demographically and geographically diverse Bay Area residents. We focused on including populations typically harder to reach with random-sample surveys or other traditional research methods (Gould et al. 2018a; Pearson et al. 2018; Wojcik et al. 2021).

Our partner organizations, which hosted sessions and recruited participants, reflected a range of audiences, interests, and services. Although a few collaborators had previously engaged with environmental issues, most were not focused on the environment; rather, they worked with sub-sectors of the population (e.g. senior citizens, youth, parents, business leaders, English learners, faith communities). We

**Figure 1.** Schematic depicting inspiration for the CLS approach and distinguishing characteristics.
initially connected with these organizations in multiple ways. Our team previously had worked in the region and thus had relationships with many organizations; we connected partner organizations through those existing connections, or by mentioning our affiliation with trusted groups. We aimed to make sessions a ‘win-win’ for partners, allowing them to concurrently gather insights to contribute to their mission fulfillment, programming, and services, as appropriate and feasible (Pearson et al. 2018). Because CLS discussions were open-ended but focused on an important and inherently interesting topic, partner organizations found it in their interest to convene members to share time and joint listening with a facilitator. They reported finding the sessions to be effective community-building exercises, so partners were interested in hosting them while concurrently having to do minimal work to plan, prepare for, and manage them.

Participants: Each CLS convened a small group (5–10) of colleagues and/or institutional members. To seek diversity among participants and data collected, we organized groups using purposeful stratified sampling (see Appendix for details) (Krathwohl 2009; Seidman 2013). We conducted 14 CLS, involving a total of 115 participants. Our aim of representing the Bay Area’s geographic, ethnic/racial, and socioeconomic diversity influenced this sample size, which exceeds the three to five sessions common in standard focus-group research (Patton 2002; Peek and Fothergill 2009). To address our desired diversity and inclusion concerns, we purposefully selected partner organizations that worked with a range of regional residents. We defined the relevant dimensions of diversity based on the theoretical frames informing the study. Two primary dimensions upon which we sought diversity were levels of prior involvement in environmental and community issues (from high to low on both) and demographics of age, gender, and race/ethnicity. To note demographic characteristics, upon entering the CLS setting, each participant was asked to complete a short information sheet, which provided us with background demographic details and provided the participants with basic study details. We assessed those data after each session and adjusted our subsequent engagement plans accordingly. Due to this adaptive approach, in the end, our participants’ demographics roughly matched those of the Bay Area overall.

CLS were conducted following procedures approved by Stanford University’s Institutional Review Board (Protocol # 23555). As per our pre-approved IRB protocol, we did not provide an honorarium for participants; we did, however, offer an honorarium to community partners, when acceptable/appropriate. We covered costs related to renting the facilities (when necessary), and we provided all materials, supplies, and food (as directed by community partners).

The resulting CLS data represented perspectives from a mix of residents – both those who self-identify as being interested in the environment and those who do not. The latter category is often overlooked in environment and sustainability studies as they can be challenging to reach with methods that rely on self-identification.

Creating a Supportive and Open Atmosphere: We aimed to create a comfortable, supportive atmosphere. Partners chose meeting locations and times most likely to be accessible (i.e. close to public transportation, outside of working hours) for participants (Happell 2007). Many participants had spent time together prior to the CLS (e.g. as friends, acquaintances, or group members) and often shared key demographic and/or identity-based characteristics (e.g. ethnicity, age, religious affiliation, parental status). Such demographic alignment often supports ‘free-flowing conversations’ in focus group-like research designs (Peek and Fothergill 2009; Brown 2015).

In another effort to encourage discussion, we strove to minimize power differentials (both participant-participant and participant-facilitator) (Happell 2007; Peek and Fothergill 2009; Brown 2015). Participants typically had similar societal or organizational roles (e.g. fellow group members). Facilitators aimed to be cognizant of imputing power to researchers and purposefully organized the physical infrastructure in a way that minimized hierarchy (see Appendix for examples). Further, we aimed to be sensitive to cultural norms and values (Gilbert 2008; Peek and Fothergill 2009). In consultation with our partners, we adapted plans to the needs of each group by, for example, increasing preparation time with partners, involving them in meeting facilitation when we were unfamiliar with cultural norms, and arranging for food and supplies in accordance with each group’s cultural preferences (Pearson et al. 2018).

We conducted training for all researchers on facilitating the sessions in a collegial, yet not heavy-handed, manner. We pilot-tested the questions and discussions, and we worked to portray a sense of empathy, warmth, active listening, and professionalism (Linville et al. 2003; Krueger and Casey 2009). Because the topics under discussion included those that were both energizing as well as, at times, contentious, we did have to move the conversation along as well as gently redirect participants at times (Franz 2011). In such cases, we used effective practices established in prior focus and discussion group studies, such as rephrasing the current speaker’s comments, noting and calling on those who have yet to speak, and indicating a shift to the subsequent topic (Krueger and Casey 2009; Franz 2011).
Conducting the Community Listening Sessions: Each CLS lasted about 1.5 hours. The interview protocol covered general perceptions of everyday life and the environment, and then sought more detail on environmental behaviors and sources of learning. While our study designs to date have used the CLS as a one-time approach, expanding to use them iteratively could serve to enhance the richness of data collected and build community. (See Table 2, Figure 2, and Appendix for further details on our questions and the CLS process.)

Post-Session Follow-Up: After each session, we thanked our community partners via email and, when possible, with a handwritten note and small token of appreciation (e.g. university notecards, mug, or baseball cap). We received universally positive feedback from the organizations as to the running of the sessions and their interest in the study findings, which we shared in terms of initial findings and, later, published articles. We remained in partnership with some of the CLS hosts, while others are part of our professional networks. Although we implemented the CLS as a one-time approach, expanding to run such sessions iteratively could further enhance the richness of data collected and build community.

Data analysis

Analyzing CLS Data: We transcribed CLS audio recordings verbatim. We labeled each participant with a unique identifier so we could link their comments with individual demographic information (provided in a brief pre-session form — see Appendix) and to follow individual participant’s comment threads throughout the CLS conversation. Observer notes recorded speaker order and the essence of comments, which helped ensure accurate matching of comments to participants. When relevant, we considered group identity while coding; for some analyses, for instance, we treated the group as a unit, characterized by relevant aspects of member identities. As one example, we noticed differences in discussion of waste in groups comprised of immigrants and non-immigrants (Gould et al., 2016b). See the Appendix for details on our coding process, including software used and illustrative examples.

Table 2. Primary questions in community listening session guide.

| Community Listening Session (CLS) Questions |
|--------------------------------------------|
| 1. Please share your name and tell us what matters most to you in your daily life. |
| 2. What comes to mind when you hear the word “environment”? |
| 3. Now that you have defined the environment, what does “taking care” of it mean to you? |
| 4. What people or things in your life make it easy to act in a way that is good for the environment? |
| 5. What makes it harder or impossible to act in a way that is good for the environment? |
| 6. If you want to better understand environmental or other issues, what do you do? Where do you go? Who do you ask? |
| 7. How, if at all, do you think what you learn influences your choices or what you do? |
| 8. What other things influence the choices you make? |
| 9. (Optional, if time allows) I’m guessing that you’ve heard people say before that the Bay Area is one of the “greenest places” on Earth. If I asked you to take me somewhere in the Bay Area where you think people are doing a good job of being “green” or taking care of the environment on a day-to-day basis, where would you take me? What might we see there? |
| 10. (Optional, if time allows) We’ve talked about choices and the way we live in respect to the environment. Has this changed over time for you? For example, did you feel differently at a different time in your life – when you were a student or a new parent, for example? |

Figure 2. Core principles of Community Listening Sessions (CLS).
Reflection on CLS approach development and implementation, and considerations for future use

The CLS structure is helpful in promoting dialogical reflection, interaction, and situated contextual discussion on a topic about which participants are experts: in the case we present here, their own everyday lives. The CLS structure allowed participants to recall relevant experiences and make meaning in the moment, with participants learning from and with each other, while the researchers could nearly blend into the background. (See Appendix for discussion.) With proper structuring – including a collaboration with a community partner as a co-convenor – CLS can allow participants to not only feel comfortable expressing themselves freely, but also benefit from a sense of empowerment and enjoyment as they easily share ideas with one another (Glesne 2006; Pearson et al. 2018).

We see CLS as particularly appropriate for situations in which researchers desire – or researchers’ understanding would benefit from – collective reflection on topics without clear-cut answers or solutions. Wicked problems provide a prominent example, as they are unstructured (i.e. have no single definition or simple causes and effects), relentless (i.e. have no obvious endpoints or ‘correct’ responses), and cross-cutting (i.e. involve many stakeholders and sectors) (Rittel and Webber 1973). Environmental issues are notoriously recognized as wicked problems (Turnpenny et al. 2009). Opening space for nuanced dialogue about these types of issues is likely important to confronting the immensely challenging problems society faces to facilitate transformations toward a more sustainable socio-ecological future (Chan et al. 2020).

Similarly, the CLS approach worked well to facilitate discussions and research related to questions that require insight into the layered, intertwined space of people’s everyday lives – situations that are increasingly common in our multifaceted society. Another important related aspect of the CLS approach is that it can foster and support deliberative discussion that addresses complex ethical issues – a type of discussion that is increasingly rare in contemporary society, yet that is crucial to our ability to equitably and sustainability manage our global system (Sandel 2020). Although we did not highlight ethical dimensions in our environmental-learning-and-behavior-focused CLS, perhaps not surprisingly, ethical questions emerged organically, likely for multiple reasons: because environmental choices involve complicated tradeoffs (e.g. across time or space); social and environmental justice are inextricably intertwined (Agyeman et al. 2002; Taylor 2011; Gould et al. 2018b); and the CLS format encouraged collective, shared, deep reflection. The Appendix includes discussion of possible further applications related to ethical dimensions.

Despite the substantial benefits of the CLS, we also identified challenges. First, we found that fully open-ended questions produced narrative dialogue among CLS participants. While such open-ended, ‘grand-tour’ questions (Glesne 2006) may have served the purposes of comfort and minimizing power differentials, they either failed to produce sufficient insight into the research questions under examination or required multiple hours and attempts to reach their intended destination.

Second, we found that the optimal mix for the CLS is often a group that has some level of familiarity with each other and a prior social comfort level, which allows the research team to drop a question more easily into the mix – like a ‘pebble-in-the-pond’-type scenario – without fully halting ongoing discussions. In this way, we have been able to encourage fertile conversation with minimal perturbation. Such a structure can generate animated discussion around the central question, still guided by the theoretical underpinnings of interest, but in a less disruptive way.

Third, as may be evident from our discussion thus far, the CLS approach requires relationship-building with community partners as well as substantial preparation on the part of the research team. The payoff of both the relationship and preparation are tremendous in terms of authenticity of approach, engagement with meaningful issues relevant to community partners, and training for researchers that can apply not only to the CLS approach but also beyond, yet such investments may not be realistic for all researchers or teams, depending on a range of constraints.

Overall, we found that attending to the participatory ethos of the CLS was essential, as was maintaining an emphasis on the approach’s collaborative learning elements. In this way, the hybrid structure produced nuanced data that honored our partners’ interests, addressed our core research questions, and was enjoyable for participants. As environmental challenges become increasingly pressing and prevalent, the use of approaches that model and encourage civic engagement and dialogue in an inclusive way may assist in further supporting necessary conversations. Although these interactions can be challenging and, at times, of high social cost for participants, having them in a semi-structured, guided setting – such as the CLS – may assist in curating a middle ground that allows for reflection, encourages ongoing participation outside the initial research process, and provides touchpoints for such socio-cultural-ecological dialogues (Gould et al. 2018a, 2018b; Ardonin, Bowers, and Wheaton, 2022.) We thus see such approaches as one avenue toward building
collective efficacy to address challenges facing the future of our species and the planet.

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References

Agyeman J, Bullard RD, Evans B. 2002. Exploring the nexus: bringing together sustainability, environmental justice and equity. Space Polity. 6(1):77–90. doi:10.1080/13562570220137907.

Ardoin NM, Heimlich JE. 2021. Environmental learning in everyday life: foundations of meaning and a context for change. Environ Educ Res. 27(12):1681–1699. doi:10.1080/13504622.2021.1992354.

Ardoin NM, Bowers AW, Wheaton M. 2022. Leveraging collective action and environmental literacy to address complex sustainability challenges. Ambio. doi:10.1007/s13280-022-01764-6.

Barron B. 2006. Interest and self-sustained learning as catalysts of development: a learning ecology perspective. Hum Dev. 49(4):193–224. doi:10.1159/000094368.

Belzile JA, Öberg G. 2012. Where to begin? Grappling with how to use participant interaction in focus group design. Qual Res. 12(4):459–472. doi:10.1177/1468794111433089.

Bloem M, Frankland J, Thomas M, Robson K. 2001. Focus groups in social research. Thousand Oaks (CA): Sage Publications Inc.

Brown S. 2015. Using focus groups in naturally occurring settings. Qual Res. 15(1):86–97. doi:10.1108/QRJ-11-2013-0068.

Cameron KA, Engel KG, McCarthy DM, Buckley BA, Mercer Kollar LM, Donlan SM, Pang PS, Makoul G, Tanabe P, Gisondi MA, et al. 2010. Examining emergency department communication through a staff-based participatory research method: identifying barriers and solutions to meaningful change. Ann Emerg Med. 56(6):614–622. doi:10.1016/j.annemergmed.2010.03.017

Chan KMA, Boyd DR, Gould RK, Jetzkowitz J, Liu J, Muraca B, Naidoo R, Olmsted P, Satterfield T, and Selomane O, et al. 2020. Levers and leverage points for pathways to sustainability. People and Nature. 2(3):693–717. doi:10.1002/pnan.10124.

Chevalier JM, Buckles DJ. 2019. Participatory action research: theory and methods for engaged inquiry. 2nd ed. London (UK): Routledge.

Collay M, Dunlap D, Enloe W, Gagnon GW. 1998. Learning circles: creating conditions for professional development. Thousand Oaks (CA): Corwin Press.

Curchill GA Jr. 1979. A paradigm for developing better measures of marketing constructs. J Mark Res. 16(1):64–73. doi:10.1177/0022243779016000110.

Dierking LD, and Falk JH. 2009. Learning for life: the role of free-choice learning in science education. In: Wolff-Michael Roth, Kenneth Tobin, editors. The World of Science Education. Leiden, Netherlands: Brill Sense; p. 179–205.

Ferreira JA. 2019. The limits of environmental educators’ fashioning of ‘individualized’ environmental citizens. J Environ Educ. 50(4–6):321–331. doi:10.1080/00958964.2019.1721769.

Franz NK. 2011. The unfocused focus group: benefit or bane? Qual Rep. 16(5):1380–1388.

Gilbert N. 2008. Researching social life. Thousand Oaks (CA): Sage Publications.

Glesne C. 2006. Making words fly: developing understanding through interviewing. Becoming Qualitative Researchers: An Introduction. 3.63–92.

Gould RK, Ardoin NM, Biggar M, Cravens AE, Wojcik D. 2016b. Environmental behavior’s dirty secret: the prevalence of waste management in discussions of environmental concern and action. Environ Manage. 58(2):268–282. doi:10.1007/s00267-016-0710-6.

Gould RK, Ardoin NM, Thomsen JM, Wyman Roth N. 2018a. Exploring connections between environmental learning and behavior through four everyday-life case studies. Environ Educ Res. 25(3):314–334. doi:10.1080/13504622.2018.1510903.

Gould RK, Phukan I, Mendoza ME, Ardoin NM, Panikkar B. 2018b. Seizing opportunities to diversify conservation. Conserv Lett. 11(4):e12431. doi:10.1111/conl.12431.

Grantham R, Lau J, Mills DJ, Cumming GS. 2022. Social and temporal dynamics mediate the distribution of ecosystem service benefits from a small-scale fishery. Ecosystem People. 18(1):15–30. doi:10.1080/26395916.2021.2003866.

Happell B. 2007. Focus groups in nursing research: an appropriate method or the latest fad? Nurse Res. 14(2):18–24. doi:10.7748/nr.2007.14.2.18.e6018.

Hopkins PE. 2007. Thinking critically and creatively about focus groups. Area. 39(4):528–535. doi:10.11711/j.1475-4762.2007.00766.x.

Ishikawa K. 1982. Guide to quality control (No. TS156. I3713 1994).

Johnson A. 1996. ‘It’s Good to Talk’: the focus group and the sociological imagination. Sociol Rev. 44(3):517–538. doi:10.1111/j.1467-954X.1996.tb00435.x.

Konisky DM, Beierle TC. 2004. Innovations in public participation and environmental decision making: Examples from the Great Lakes region. Soc Nat Resour. 14(9):815–826. doi:10.1080/0894921201753210620.

Kratwohl DR. 2009. Methods of educational and social science research: the logic of methods. 3rd ed. Long Grove (IL): Waveland Press.
Krueger R, Casey M. 2009. Focus groups: a practical guide for applied research. Thousand Oaks (CA): Sage Publications.
Lave J, Wenger E. 1991. Situated learning: legitimate peripheral participation. Cambridge (UK): Cambridge University Press.
Li C, Monroe M. 2018. Development and validation of the climate change hope scale for high school students. Environ Behav. 50(4):454–479. doi:10.1177/0013916517708325.
Linville D, Lambert-Shute J, Fruhauf CA, Pieryc FP. 2003. Using participatory focus groups of graduate students to improve academic departments: a case example. Qual Report. 8(2):210–223.
Madriz E. 2000. Focus groups in feminist research. Handbook of Qualitative Research. 2:835–850.
Mason-Bish H. 2019. The elite delusion: reflexivity, identity and positionality in qualitative research. Qual Res. 19(3):263–276. doi:10.1177/1468794118770078.
Melgar Alcantud P, Puigvert L, Rios O, Duque E. 2021. Language of desire: a methodological contribution to overcoming gender violence. Int J Qual Methods. 20:16094069211034597. doi:10.1177/16094069211034597.
National Research Council (NRC). 2009. Learning science in informal environments: people, places, and pursuits. Washington (DC): The National Academies Press.
Nyumba TO, Wilson K, Derrick CJ, Mukherjee N, Geneletti D. 2018. The use of focus group discussion methodology: insights from two decades of application in conservation. Methods Ecol Evol. 9(1):20–32. doi:10.1111/2041-210X.12860.
Oliver LP. 1987. Study circles. Coming together for personal growth and social change. A report on this long-standing phenomenon in adult education as it has been integrated into Swedish National Life and is now being applied in North America. Bethesda (MD): Seven Locks Press.
Oliver LP. 1990. Study circles: new life for an old idea. Adult Learning. 2(3):20–22.
Patton MQ. 2002. Qualitative research & evaluation methods. 3rd ed. Thousand Oaks (CA): Sage.
Pearson KR, Backman M, Gernni S, Moriggi A, Pisters S, de Vrieze A. 2018. Arts-based methods for transformative engagement: a toolkit. Wageningen (NE): SUSPLACE.
Peek L, and Fothergill A. 2009. Using focus groups: lessons from studying daycare centers, 9/11, and Hurricane Katrina. Qual Res. 9(1):31–59. doi:10.1177/1468794108098029.
Reed MS. 2008. Stakeholder participation for environmental management: a literature review. Biol Conserv. 141(10):2417–2431. doi:10.1016/j.biocon.2008.07.014.
Reed MS, Vella S, Challies E, de Vente J, Frewer L, Hohenwallner-Ries D, Huber T, Neumann RK, Oughton EA, Sidoli Del Ceno J, et al. 2018. A theory of participation: What makes stakeholder and public engagement in environmental management work? Restor Ecol. 26:S7–S17. doi:10.1111/rec.12541.
Reid A, and Liu B. 2020. Science education in informal settings. In: A. Fitzgerald, D. Corrigan, editors. Science Education for Australian Students: Teaching Science from Foundation to Year 12 (1st ed., p. 262–301). Allen & Unwin.
Rittel HW, Webber MM. 1973. 2.3 planning problems are wicked. Polity. 4(155):e169.
Rodriguez KL, Schwartz JL, Lahman MKE, Geist MR. 2011. Culturally responsive focus groups: reframing the research experience to focus on participants. Int J Qual Methods. 10(4):400–417. doi:10.1177/1609406911000407.
Rogoff B. 1990. Apprenticeship in thinking: cognitive development in social context. Oxford (UK): Oxford University Press.
Rogoff B. 1994. Developing understanding of the idea of communities of learners. Mind, culture, and activity. 1(4):209–229.
Rogoff B. 2014. Learning by observing and pitching in to family and community endeavors: an orientation. Hum Dev. 57(2–3):69–81. doi:10.1159/000356757.
Sandel MJ. 2020. The Tyranny of merit: what’s become of the common good? London (UK): Allen Lane.
Seidman I. 2013. Interviewing as qualitative research: a guide for researchers in education and the social sciences. 4th ed. New York (NY): Teachers College Press.
Spiegil SJ, Thomas S, O’Neill K, Brondgeest C, Thomas J, Beltran J, Hunt T, Yassi A. 2020. Visual storytelling, intergenerational environmental justice and Indigenous sovereignty: exploring images and stories amid a contested oil pipeline project. Int J Environ Res Public Health. 17(7):2362. doi:10.3390/ijerph17072362.
Sprague NL, Okere UC, Kaufman ZB, Ekenga CC. 2021. Enhancing educational and environmental awareness outcomes through photovoice. Int J Qual Methods. 20:16094069211016719. doi:10.1177/16094069211016719.
Stern PC, Dietz T. 1994. The value basis of environmental concern. J Soc Issues. 50(3):65–84. doi:10.1111/j.1540-4560.1994.tb02420.x.
Stoll-Kleemann S, O’Riordan T, Jaeger C. 2001. The psychology of denying concern: the role of alterations to social context. J Environ Change. 11(2):107–117. doi:10.1016/S0959-3780(00)00061-3.
Taylor DE. 2011. Introduction: the evolution of environmental justice activism, research, and scholarship. Environ Pract. 13(4):280–301. doi:10.1017/S1466046611000329.
Turnpenny J, Lorenzoni I, Jones M. 2009. Noisy and definitely not normal: responding to wicked issues in the environment, energy and health. Environ Sci Policy. 12(3):347–358. doi:10.1016/j.envsci.2009.01.004.
Vygotsky L. 1978. Interaction between learning and development. Readings on the Development of Children. 23(3):34–41.
Wade S, Hammick M. 1999. Action learning circles: action learning in theory and practice. Teach High Educ. 4(2):163–178. doi:10.1080/1356251990040202.
Willis K, Green J, Daly J, Williamson L, Bandypadhyay M. 2009. Perils and possibilities: achieving best evidence from focus groups in public health research. Aust N Z J Public Health. 33(2):131–136. doi:10.1111/j.1753-4649.2009.00358.x.
Wilson V. 1997. Focus groups: a useful qualitative method for educational research? Br Educ Res J. 23(2):209–224. doi:10.1080/0141192970230207.
Wilson MA, Howarth RB. 2002. Discourse-Based valuation of ecosystem services: establishing fair outcomes through group deliberation. Ecol Econ. 41(3):431–443. doi:10.1016/S0921-8009(02)00092-7.
Wojcik DJ, Ardoin NM, Gould RK. 2021. Using social network analysis to explore and expand our
understanding of a robust environmental learning landscape. Environ Educ Res. 27(9):1263–1283.
Zaehringer JG, Lundsgaard-Hansen L, Thein TT, Llopis JC, Tun NN, Myint W, Schneider F. 2020. The cash crop boom in southern Myanmar: tracing land use regime shifts through participatory mapping. Ecosyst People. 16(1):36–49. doi:10.1080/26395916.2019.1690916.
Zeithaml VA, Berry LL, Parasuraman A. 1993. The nature and determinants of customer expectations of service. Acad Mark Sci. 21(1):1–12. doi:10.1177/0092070092003932110001.