

Beyond consensus: Negotiating climate citizenship through deliberative communication in school-based climate action

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Abstract

This study critically examines deliberative democracy within school-based climate action, contending that student agency and participation in climate citizenship education are shaped by communicative processes rather than solely by individual capability. While environmental education increasingly addresses climate change, instrumental and technocratic approaches continue to restrict authentic democratic engagement. Employing a critical ethnographic methodology informed by Habermasian communicative action and Freirean critical pedagogy, data were collected from a school-based climate action programme involving teachers, students, and external facilitators. The findings indicate that deliberative processes are shaped by communicative, instrumental, and strategic rationalities, resulting in asymmetrical negotiation, partial compromise, and contingent consensus. Although dialogic spaces foster student participation and critical reflection, these opportunities are constrained by institutional structures, cultural norms, and power relations. The study concludes that student agency is context-dependent and relational, emerging from communicative processes. It recommends repositioning climate education as a dialogic and participatory space to more effectively support democratic engagement.

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Introduction

Climate change represents a significant social and political challenge that requires collective decision-making and democratic engagement. Increasingly, scholars recognise it as an issue that requires collective action and democratic processes (Hormio, 2023; Judge et al.,



2023). Education plays a crucial role, not only in disseminating knowledge but also in fostering students' understanding of social and ecological interconnections and their participation in decision-making (Gallay et al., 2025). Education for Sustainable Development (ESD) promotes awareness, responsibility, and action toward achieving sustainability goals (Arslan & Curle, 2024; Beasy, 2020).

Despite these objectives, environmental and climate change education frequently relies on practical and technical approaches. Such methods emphasise behavioural change, outcome measurement, and technical solutions, often positioning students as passive recipients rather than active participants in decision-making (Dunlop et al., 2024; Pettig & Lippe, 2024; Slimani et al., 2021). Consequently, the social, political, and democratic dimensions of climate change are frequently neglected, limiting opportunities for open discussion and meaningful participation (Olsson, 2022; Romsdahl, 2020).

Within social science education, climate change is increasingly understood as a citizenship issue involving values, competing interests, and public deliberation rather than merely a scientific or environmental problem (Sarid & Goldman, 2021; Urberg, 2025). In this perspective, education should extend beyond promoting pro-environmental behaviour by creating opportunities for students to deliberate, negotiate differing viewpoints, and participate in collective decision-making about climate-related issues. Such educational experiences position students as active civic agents capable of reflection, reasoning, and collaborative action in response to complex socio-environmental challenges (Dobson, 2007).

While closely related, climate citizenship, environmental citizenship, and ecological citizenship represent distinct yet overlapping traditions. Environmental citizenship broadly concerns citizens' responsibilities for environmental sustainability, stewardship, and ecological justice (Dobson, 2007). Ecological citizenship extends this perspective by emphasising collective responsibility, ecological interdependence, and moral obligations that transcend formal political institutions and national boundaries (Triyanto et al., 2025). Climate citizenship, by contrast, focuses more specifically on citizens' responsibilities, participation, and agency in responding to climate change and its socio-political consequences. While environmental and ecological citizenship provide broader normative frameworks for understanding citizens' environmental responsibilities, this study adopts climate citizenship education because it specifically focuses on how students develop democratic participation, negotiate responsibilities, and exercise communicative agency in response to climate change through educational processes (Baildon & Baildon, 2025; Dobson, 2007).

Recent scholarship from the Global South further suggests that climate citizenship cannot be understood solely through individual responsibility or behavioural change. Instead, climate citizenship education is embedded within socio-cultural, institutional, and political contexts that shape how young people engage with environmental issues. Studies of climate change education in developing-country contexts demonstrate that meaningful participation is influenced by unequal educational opportunities, policy implementation, cultural norms, and the availability of inclusive spaces for dialogue and civic engagement (Mbah et al., 2022; United Nations Development Programme, 2022). Consequently, climate citizenship should be understood not simply as the acquisition of environmental knowledge or pro-environmental behaviour, but as a relational and context-dependent process through which young people negotiate responsibilities, participation, and collective action within existing social and educational structures. This perspective is particularly relevant to the present study because it highlights that meaningful participation depends on the communicative conditions through which students can deliberate, negotiate differences, and collectively construct responses to climate-related challenges.

In climate citizenship education, participation should extend beyond compliance with rules or involvement in environmental programmes. It should be a democratic, communicative process in which students consider diverse perspectives, navigate disagreements, and reflect

critically on social and environmental issues. Schools function not only as sites for acquiring environmental knowledge but also as civic spaces where students practice discussion, defend their viewpoints, and collaborate to address complex problems. This approach shifts climate education from a technical emphasis to a political, discussion-based model of sustainability learning. Effective communication is essential to understanding how participation, agency, and democratic engagement develop within schools.

To support this discussion-based approach, the deliberative democracy framework provides insight into the mechanisms of democratic participation. In this context, "deliberative democracy" refers to a form of democracy centred on discussion and collective reasoning, "dialogue" denotes the exchange of ideas, and "consensus-building" involves working toward agreement. This framework values open conversation, reason-giving, and agreement-building through inclusive communication (Gibson, 2020; Tavernaro-Haidarian, 2020). According to Habermas's theory, "deliberation" involves achieving mutual understanding through rational discourse (Habermas, 1984). Similarly, Freire's critical pedagogy defines "praxis" as action informed by reflection, emphasising dialogue, reflection, and action to develop critical awareness and transformative learning (Freire, 2000). Collectively, these perspectives position education as a space where knowledge, participation, and agency are constructed through communication. However, hierarchical structures, institutional requirements, and cultural norms shape school communication and can restrict equal participation (Knowles & Camicia, 2025). In many settings, including Indonesia, decision-making often prioritises efficiency, such as majority voting, over inclusive deliberation (Kardiman et al., 2025).

Existing studies on climate and environmental education have increasingly emphasised participation, civic engagement, and democratic learning. However, researchers commonly examine participation in terms of programme implementation, behavioural outcomes, or civic involvement, while the communicative processes through which participation is negotiated, contested, and constructed remain underexplored. Limited attention has been paid to how negotiation, compromise, consensus-building, and power relations shape student agency in everyday school life. Consequently, participation is often treated as a measurable outcome rather than as a deliberative process through which agency is communicatively produced and transformed.

To address these gaps, this study investigates how deliberative democracy is enacted in school-based climate action and how communication influences student agency and participation in climate citizenship education. The research examines interactions among teachers, students, and external facilitators, with particular attention to negotiation, compromise, and consensus-building. This study contributes to social science education by offering conceptual insights and empirical examples of deliberative processes in schools, and by clarifying how communication shapes student agency. Furthermore, it positions education as a critical arena for fostering democratic participation in addressing complex social and environmental challenges. Additionally, the study extends deliberative democratic theory by showing how institutional and cultural constraints mediate communication within schools and reconceptualises student agency as relational and communicatively constructed rather than solely individual or behavioural.

Method

A critical ethnographic approach was used to examine how deliberative communication processes form in climate change education practices within schools. This methodology enables not only the description of social practices but also the identification of power dynamics, participation constraints, and covert communication forms in daily interactions. Critical ethnography is grounded in the premise that ideological structures and power relations shape social reality and may restrict individual autonomy (Thomas, 2011). In this study, the approach helps explain how communication practices, including negotiation, compromise, and consensus, are shaped by structural and cultural conditions in the school environment.

Additionally, the research draws conceptually on Jürgen Habermas's theory of communicative action, particularly the principles of inclusive communication, freedom from domination, and equal participation (Habermas, 1984, 1987). This theoretical framework provides an analytical lens for assessing the quality of communication processes in educational practice.

The researcher was positioned as a partially involved participant rather than a detached observer in the everyday dynamics of the climate action programme. Approximately two months of field engagement involved intensive interaction with teachers, students, and facilitators across both formal and informal settings, including offline activities and digital communication platforms. This extended engagement facilitated observation of explicit deliberative interactions as well as subtle forms of negotiation, hesitation, silence, and resistance that might not have surfaced through interviews alone. In critical ethnography, the researcher's presence is considered integral to the social reality under examination rather than external to it (Thomas, 2011). Reflexive attention therefore focused on the potential influence of the researcher's academic observer role on participants' communication practices and responses. For example, students often appeared more cautious in formal discussions when teachers were present, whereas more critical expressions emerged in informal and online conversations. This reflexive awareness was essential for interpreting the negotiation of power relations, authority, and participation within the school context.

The study was conducted at a high school in East Java, Indonesia, that participated in the 40 Days Challenges for Sustainability (40-DCfS), a climate action programme organised by Education for Sustainable Development–Indonesia (ESDI) to promote the Sustainable Development Goals (SDGs) and Education for Sustainable Development (ESD) through youth engagement in climate change action. The programme challenged participating schools to design and implement sustainability initiatives over a forty-day period while documenting planning, implementation, reflection, and evaluation processes. Participation in the programme involved collaboration between Internal Environmental Agents (IEA), consisting of teachers and students within the school, and External Environmental Agents (EEA), who provided mentoring, guidance, and programme assessment. This organisational structure created opportunities for dialogue and collective decision-making while simultaneously introducing institutional expectations, evaluation criteria, and authority relations that shaped how participation, negotiation, and consensus-building unfolded during the programme. As such, the 40-DCfS programme provided a relevant setting for examining deliberative communication and student agency in climate citizenship education.

Data collection occurred from February to June 2023, encompassing the entire programme cycle, including socialisation, planning, implementation, reflection, evaluation, and announcement of results. Moderate participant observation was employed, with direct engagement in school activities for approximately two months. This approach enabled natural observation of interactions without full integration into the formal structure of activities. Data sources included direct observation of school activities, online and offline conversations (including WhatsApp groups), informal interviews with teachers and students, field notes, and visual documentation such as photographs. Including digital conversation data provided access to informal communication forms often absent in formal settings, revealing broader communication dynamics.

Data analysis followed the principles of critical ethnography in stages. Initially, all data were transcribed and organised into meaningful units. Subsequently, a coding process identified recurring communication patterns, particularly those related to negotiation, compromise, and consensus. Rather than treating communication practices as neutral, the analysis critically examined how authority, institutional expectations, and cultural norms shaped opportunities for participation and constrained deliberative engagement. The analysis considered not only participants' statements but also silences, hesitation, indirect expressions, and unequal communicative positioning within interactions. Further analysis involved

thematic categorisation to identify key interaction themes, conscientization to understand reality as shaped by power relations and social inequality, and defamiliarisation to question accepted practices and uncover hidden meanings. This process enabled examination of both surface-level interactions and the underlying ideological structures and power relations that shape communication practices in educational contexts (Carspecken, 2020). Before data collection, all participants were told the research purpose, procedures, and data use, and they provided informed consent. We kept participants' identities confidential through anonymity, and we stored all data with due regard for security and confidentiality. Participants were also free to withdraw from the research at any time without consequence. For digital conversation data (WhatsApp), data collection occurred after participants' consent, ensuring no coercion in granting access.

Results and Discussion

Deliberative Communication in Practice: Between Ideal and Constraint

This section examines the roles of negotiation, compromise, and consensus in school-based climate action. Rather than adhering to an idealised model, these processes are shaped by communicative, instrumental, and strategic rationalities, as outlined by Habermas (1984). The findings indicate that deliberative practices in education extend beyond dialogue and are shaped by school hierarchies, institutional expectations, and culturally embedded interaction patterns.

Asymmetrical Negotiation: Participation under Instrumental Constraints

Negotiation typically serves as the primary mode of communication at the outset of decision-making, particularly when students propose ideas for environmental action. However, this process frequently exhibits inequality, as teachers and external facilitators exert considerable influence over the direction and outcomes of discussions. One student explained:

"Actually, we had an idea to hold a campaign outside of school, but in the end, we were directed to focus activities more on the inside of the school, because they said it would be easier to measure." (Interview, Student 1)

Field observations also show that facilitators often redirected student proposals to fit programme requirements:

"The facilitator corrected students' proposals several times and reminded them that activities must align with the programme's assessment indicators." (Field note)

In several discussions, students frequently responded with hesitation or revised their proposals after facilitator feedback. In formal meetings, students rarely articulated explicit disagreement. Instead, students often revised their ideas after receiving feedback from teachers or facilitators, and some remained quiet when their proposals were redirected. More critical thoughts usually came up later in informal conversations outside official meetings. These patterns show that unequal communication shaped participation, with institutional expectations quietly influencing what students could contribute. This suggests that negotiation involves more than reaching mutual understanding.

Instrumental rationality also shapes it by prioritising efficiency, measurability, and programme outcomes (Habermas, 1984). Rather than reflecting an equal exchange of reasons, negotiation was increasingly organised around institutional imperatives such as programme assessment, efficiency, and accountability. From Habermas's perspective, this illustrates how systemic imperatives can colonise communicative spaces, redirecting interaction from mutual understanding toward organisational requirements (Habermas, 1987). This interpretation aligns with previous studies showing that environmental education is often shaped by technocratic, outcome-oriented approaches that constrain democratic participation (Dunlop et

al., 2024; Pettig & Lippe, 2024). Consequently, negotiation in this context combines communicative objectives with institutional control, resulting in what may be termed asymmetrical negotiation.

Partial Compromise: Maintaining Participation

In addition to negotiation, compromise sustains interaction among participants with differing perspectives. However, the compromises observed in this study are not fully deliberative; rather, they are partial and characterised by inequality. For instance, when students proposed community-based environmental action, the teacher redirected the focus:

"The idea is good, but maybe we should start with something simple first, something we can control at school." (Interview, Teacher 1)

A student later reflected:

"So in the end we agreed, even though we actually wanted the activity to be broader..." (Interview, Student 2)

In several interactions, compromise emerged not from fully open deliberation but from gradual adjustment to what was considered realistic and institutionally manageable. Although students initially proposed broader, community-oriented activities, discussions often shifted toward safer, more measurable programmes within the school environment. During group discussions, students rarely rejected teachers' suggestions directly. Instead, they tended to respond with brief agreement, laughter, or silence before eventually adapting their proposals to align with institutional expectations. Brief verbal agreement, laughter, and strategic silence should not be interpreted as straightforward indicators of consensus. Rather, within the interactional context of these discussions, they functioned as mitigative and face-saving communicative strategies that reduced interpersonal tension while simultaneously signalling accommodation to institutional authority. These interactional patterns suggest that compromise functioned less as equal negotiation among participants than as a communicative adjustment that sustained participation while accommodating institutional constraints. Instead, students negotiated agreements within authority relations and practical considerations that shaped their opportunities to influence collective decisions.

Compromise may also be understood through Habermas's discourse ethics, in which the legitimacy of agreement depends upon participants having symmetrical opportunities to question, justify, and revise validity claims (Habermas, 1990). In the present study, participants reached compromises under unequal communicative conditions, suggesting they did not enjoy generalised symmetry during deliberation. Teachers and facilitators retained greater authority to define feasible alternatives, while students primarily adapted their proposals to institutional expectations. Consequently, agreement reflected accommodation to institutional authority rather than legitimacy achieved through discourse. This finding aligns with recent critiques suggesting that deliberative agreements are often shaped by power asymmetries and institutional demands rather than fully inclusive dialogue (Hammond, 2025; Huttunen, 2025). Therefore, the compromises observed here are better understood as partial compromises that sustain participation without fully satisfying the deliberative conditions required for legitimate agreement.

Contingent Consensus: Agreement without Deep Understanding

Consensus is typically regarded as the final stage in deliberative communication. However, the empirical evidence indicates that consensus is often temporary, context-dependent, and does not arise from substantive agreement. One student explained:

"We just agreed, because time was limited, so it wasn't possible to continue discussing it." (Interview, Student 3)

Another interaction reflects a tendency to avoid conflict:

"Okay, let's just go along with what was suggested, so it'll be over quickly."
(Online discussion)

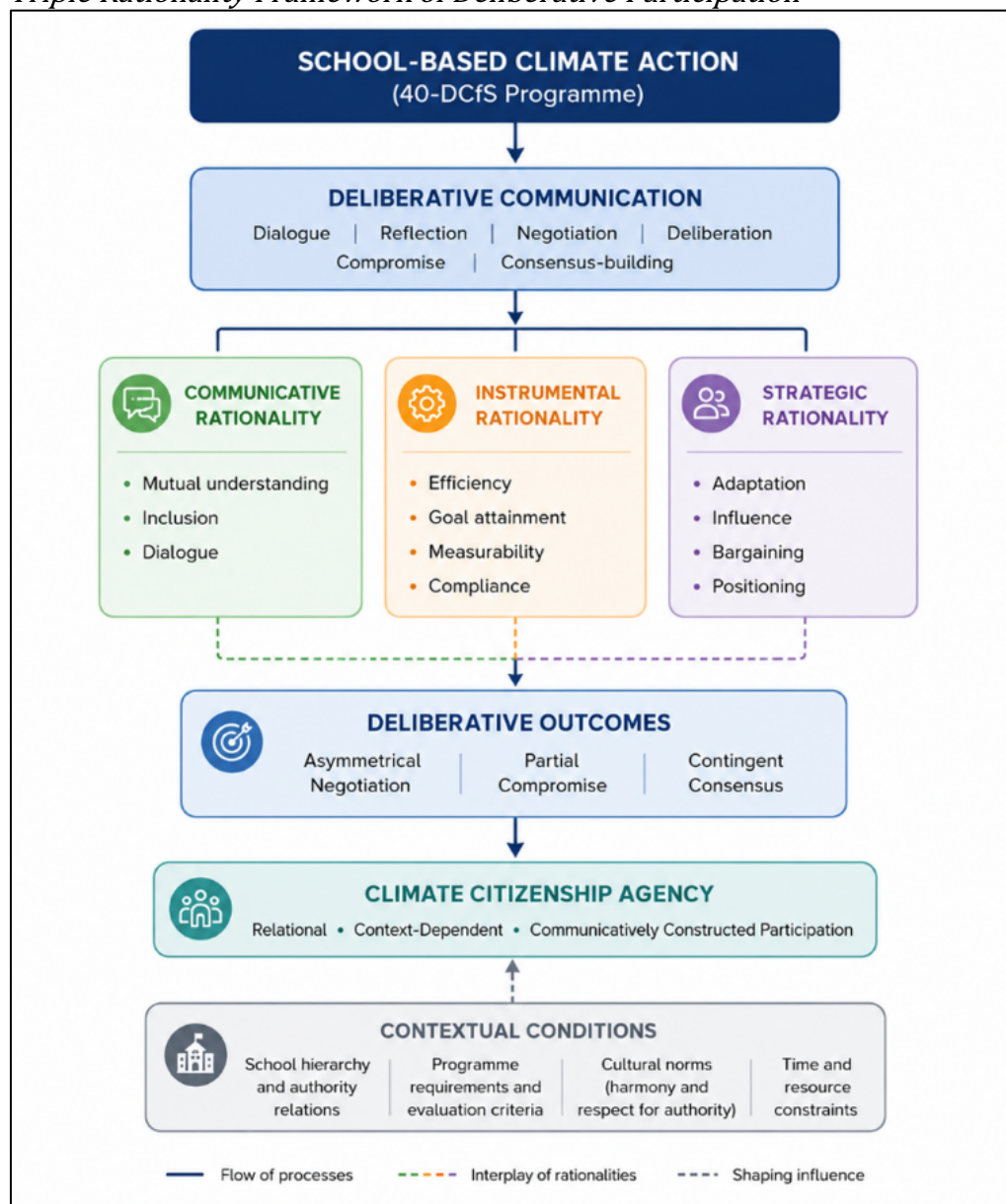
Participants' linguistic choices provide additional insight into how they negotiated consensus. Expressions such as "let us just go along" and "so it will be over quickly" do not primarily signal genuine agreement; instead, they function as accommodative and face-saving strategies that minimise disagreement while facilitating procedural closure. The emphasis on completing the discussion "quickly" suggests that efficiency became a more immediate communicative priority than continued deliberation. From a critical ethnographic perspective, these interactional patterns reveal how institutional expectations and hierarchical relationships subtly shape communicative behaviour, encouraging accommodation rather than explicit contestation. Collectively, these interactional patterns suggest that consensus functioned less as an expression of shared understanding than as a communicative strategy for managing institutional expectations, limited deliberative time, and interpersonal relationships. Consensus therefore emerged through pragmatic accommodation rather than through the reciprocal justification expected in ideal deliberation.

The contingent consensus observed in this study more closely resembles what recent deliberative scholars describe as pseudo-consensus, in which apparent agreement conceals unresolved differences because participants adapt to institutional expectations, authority relations, or social pressures (Hammond, 2025; Huttunen, 2025). This interpretation is consistent with recent studies suggesting that consensus in deliberative settings is often provisional, negotiated, and contextually determined rather than fully shared (Čísař et al., 2025). From this perspective, consensus should be evaluated not only by the existence of agreement but also by the communicative conditions through which it is produced. Habermas's distinction between communicative and strategic action helps explain this pattern. Rather than emerging from communicative rationality oriented toward mutual understanding, the agreements observed in this study frequently reflected strategic adaptation to institutional expectations, authority relations, and programme requirements that shaped communicative interaction (Habermas, 1984, 1987). Consequently, the consensus achieved here remained contingent: it enabled collective participation and programme continuity while leaving important differences only partially negotiated.

Overall, the study demonstrates that deliberative communication cannot be understood through a single rationality. Rather, it emerges from the interplay of three forms of rationality: (a) communicative rationality, evident in dialogue and idea exchange; (b) instrumental rationality, evident in goal-oriented decision-making; and (c) strategic rationality, evident in actors' adaptation to power relations. To synthesise the empirical findings and theoretical interpretation.

The framework illustrates how communicative, instrumental, and strategic rationalities interact within school-based climate action programmes. Their interplay shapes deliberative communication processes and produces three key outcomes—asymmetrical negotiation, partial compromise, and contingent consensus. These outcomes subsequently influence the development of students' climate citizenship agency. The framework also highlights how institutional, cultural, and structural contexts condition participation and shape opportunities for democratic engagement.

Figure 1 synthesises the study's central findings by showing how communicative, instrumental, and strategic rationalities coexist and interact within school-based climate action. Rather than operating independently, these rationalities continuously shape deliberative communication processes and influence how students negotiate participation, respond to institutional expectations, and engage with collective decision-making. The framework demonstrates that climate citizenship agency emerges not solely from participation itself but from the dynamic interaction between communicative practices and the broader institutional and cultural conditions in which participation occurs.

Figure 1.*Triple Rationality Framework of Deliberative Participation*

The findings indicate that structural, institutional, and cultural factors constrain the implementation of deliberative democracy in education. Unequal power relations, hierarchical structures, and prevailing cultural norms hinder equal participation, creating a gap between democratic ideals and practice. Nevertheless, dialogic spaces can provide students with meaningful opportunities for participation and critical reflection. At times, students shared opinions, discussed ideas, and engaged in collective decision-making. This aligns with Freire's conception of dialogue as learning through critical engagement rather than passive reception (Lake & Kress, 2013). Even when deliberation is imperfect, it contributes to developing critical awareness and democratic competencies.

A key finding of this study is that student agency is not solely an individual attribute but depends on relationships and context. Agency emerges from communicative processes that either facilitate or constrain participation. This supports the view that democratic education is grounded in dialogue and interaction, with agency constructed through social relationships (Kauppi & Drerup, 2021). Participation alone did not necessarily translate into meaningful agency; rather, it depended on the quality of communication. Thus, student agency in climate citizenship education is shaped by both individual capacity and the broader communicative environment.

Deliberation, Agency, and the Limits of Democratic Participation

Beyond the empirical findings, this study raises broader questions regarding the relationships among deliberation, participation, and democratic agency in climate citizenship education. The three patterns identified in this study—asymmetrical negotiation, partial compromise, and contingent consensus—suggest that deliberative participation cannot be adequately explained through a single form of rationality. Instead, participation emerges through the dynamic interaction of communicative, instrumental, and strategic rationalities that shape students' opportunities to deliberate, negotiate, and act within institutional contexts. Habermas conceptualises deliberation as communicative action oriented toward mutual understanding (Habermas, 1984). A key finding of this study is that communicative processes in schools are simultaneously influenced by systemic imperatives, institutional authority, and cultural expectations that structure participation (Habermas, 1987). This observation also aligns with comparative studies of deliberative democracy in Asia, which show that cultural traditions, institutional arrangements, and hierarchical political contexts mediate deliberative practices rather than simply reproducing Western normative models (He et al., 2021). Consequently, deliberation in schools frequently occurs under unequal communicative conditions. This challenges normative assumptions in democratic education that participation inherently produces agency or democratic empowerment. In practice, participation may remain procedural, strategic, or institutionally managed, particularly when educational activities are heavily influenced by assessment criteria, programme requirements, or teacher authority. Students may formally participate in discussions yet retain limited influence over decision-making. Therefore, participation should be understood not merely as involvement in activities, but as the extent to which communicative conditions enable students to express dissent, negotiate meanings, and influence peers.

Collectively, the evidence suggests that consensus in educational deliberation is often provisional and context-dependent, rather than fully rational or emancipatory. Agreements were frequently shaped by practical factors such as time constraints, efficiency, social harmony, and respect for authority. This supports broader critiques that consensus in practice is rarely free from power imbalances and communicative inequalities (Hammond, 2025; Huttunen, 2025; Spannring, 2019). In many Asian classrooms, including those in Indonesia, cultural values such as harmony, politeness, and respect for authority can make open disagreement particularly challenging. To maintain social harmony, students often avoid conflict, even at the expense of communicative equality. These dynamics continue to shape classroom interactions.

While Habermas's deliberative framework offers an important normative ideal for democratic communication, this study's findings also resonate with alternative perspectives on democratic participation. Mouffe (2000), for example, argues that democratic life is not characterised by the achievement of rational consensus but by the ongoing negotiation of differences and conflicts among actors with unequal positions and interests. From an agonistic perspective, disagreement is not necessarily a failure of democracy; rather, it is an inherent and productive feature of democratic engagement. The asymmetrical negotiations and partial compromises identified in this study suggest that climate citizenship education operates through continuous negotiation of competing perspectives rather than through the realisation of ideal consensus. In this sense, the contingent consensus observed among students may be interpreted not as evidence of failed deliberation but as a pragmatic, contextually situated outcome of democratic interaction.

Similarly, Young's (2000) conception of communicative democracy broadens participation beyond rational argumentation alone. Young critiques deliberative models that privilege formal reason-giving and emphasises the democratic significance of narrative, greeting, rhetoric, silence, and other forms of communication that reflect participants' social positions and lived experiences. The findings reveal that students often expressed participation through hesitation, indirect responses, delayed reactions, informal conversations, and strategic

accommodation rather than explicit disagreement in formal meetings. Conventional deliberative frameworks often overlook these communicative practices, but they become visible when participation is understood as relational, contextual, and culturally mediated. From Young's perspective, such forms of communication should not be interpreted as an absence of participation but as alternative modes through which students negotiate agency within hierarchical school environments.

Taken together, these perspectives suggest that climate citizenship education may benefit from moving beyond a singular emphasis on ideal deliberation toward a broader understanding of democratic participation that recognises conflict, plurality, relationality, and diverse communicative expressions. Rather than evaluating educational dialogue solely according to Habermasian standards of consensus and symmetry, democratic participation can also be understood through students' capacity to navigate differences, express concerns in culturally meaningful ways, and engage critically with institutional structures. This interpretation strengthens the argument that student agency is not merely an individual attribute but an emergent outcome of communicative interactions shaped by both democratic aspirations and contextual constraints.

These observations also resonate with recent scholarship on climate citizenship, civic engagement, and climate change education in the Global South and Asia, which suggests that young people's environmental participation is shaped not only by individual motivation but also by socio-cultural norms, institutional arrangements, and opportunities for meaningful civic engagement. Rather than viewing climate action as the outcome of individual behavioural change alone, recent studies emphasise the importance of transformative learning, community participation, and contextually grounded civic engagement in enabling young people to respond collectively to environmental challenges (Indrawan et al., 2022; Mbah et al., 2022; United Nations Development Programme, 2022). These findings extend these perspectives by showing that climate citizenship is communicatively constituted through students' everyday interactions within school settings. Participation was enacted not only through visible environmental actions but also through the ongoing negotiation of opportunities, constraints, responsibilities, and authority relations embedded in school deliberations. This interpretation reinforces the argument that climate citizenship education should move beyond promoting environmental responsibility toward creating communicative conditions that enable meaningful participation, critical dialogue, and collective agency.

At the same time, this study does not imply that deliberative practices in schools are without value or entirely governed by instrumental rationality. Rather, the analysis shows that even imperfect dialogue can give students opportunities for critical thinking, collaborative negotiation, and democratic learning. Drawing on Freirean critical pedagogy, dialogue is essential because it helps students move from passive reception to active engagement with social and environmental issues. Therefore, deliberative communication should be evaluated not solely by ideal standards, but also by its capacity to broaden communication, foster reflection, and cultivate critical agency within schools. The findings also indicate that deliberative participation in climate citizenship education often manifests through subtle, indirect communicative practices rather than solely through explicit disagreement. Hesitation, silence, delayed responses, and informal conversations outside formal meetings are significant ways students negotiate participation within hierarchical school environments. These interactional dynamics suggest that democratic engagement in educational contexts may develop through cautious, relational communication shaped by institutional expectations and socio-cultural norms.

The interactions observed here carry several implications for climate citizenship education. First, climate education should move beyond a focus on behavioural participation and technical activities toward fostering communicative and deliberative competencies. Participation in climate action programmes does not inherently lead to democratic engagement

unless students have meaningful opportunities to question, negotiate, and influence collective decisions. Second, teachers play a pivotal role not only as programme coordinators but also as facilitators of communicative spaces. This necessitates educational practices that promote openness, reflexive dialogue, and critical discussion, rather than merely procedural participation or task completion. Deliberative engagement is particularly vital in climate citizenship education, given the complexity, contestation, and broader social and political dimensions of environmental issues. Third, the study highlights the importance of acknowledging cultural and institutional contexts when implementing deliberative approaches in schools. In settings where respect for authority and social harmony strongly influence classroom interaction, students may require more supportive, dialogic environments to express dissent, critique ideas, or share alternative perspectives. Consequently, democratic participation in climate education should be understood not as adopting ideal deliberative models, but as creating context-sensitive communicative conditions that incrementally expand students' critical agency and democratic confidence. Finally, this study highlights the necessity for climate citizenship education to integrate communicative, emotional, and relational dimensions of participation. Climate-related learning encompasses not only knowledge acquisition but also negotiating values, emotions, responsibilities, and collective futures. Educational programmes that foster dialogue, reflection, and collaborative meaning-making are therefore more likely to support transformative forms of environmental citizenship.

This study has several limitations. First, it was conducted in a single school and focused on one climate action programme, which may limit the generalisability of the findings to other schools or cultural contexts. Specific institutional settings, relationships, and local norms shaped the observed communication patterns, which may differ elsewhere. Second, although critical ethnography provides in-depth insights into participation and communication, the researcher's presence may have influenced participants' interactions during discussions and activities. Despite efforts to mitigate this effect, some instances of disagreement or strategic communication may not have been fully captured. Finally, the study primarily examined deliberative interactions within the school programme and did not assess the long-term impacts on students' civic or environmental engagement. Future research could investigate how experiences in climate citizenship education influence students' political agency, democratic participation, and environmental action over time and across diverse contexts. These dynamics show that democratic participation in schools remains an ongoing, negotiated communicative process.

Conclusion

This study contributes to the growing literature on climate citizenship education by demonstrating that democratic participation in school-based climate action is better understood as a situated communicative process than as the realisation of ideal deliberative conditions. Rather than viewing asymmetrical negotiation, partial compromise, and contingent consensus as deficiencies of deliberation, this study argues that they constitute contextually meaningful forms of democratic participation emerging from the interaction of communicative, instrumental, and strategic rationalities. This perspective extends prevailing deliberative models by showing how institutional structures, cultural norms, and programmatic demands actively shape students' opportunities to exercise agency within climate citizenship education.

Competing interests

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethics Approval

This study was conducted in accordance with ethical research principles involving human participants. Before data collection, we informed all participants about the purpose, procedures, and use of data, and obtained informed consent. Participation was voluntary, and participants could withdraw at any time without consequence. To ensure confidentiality, we anonymised all personal identifiers. We gave special consideration to digital communication data (WhatsApp), which we collected only after explicit participant consent. This study did not require formal ethical approval as it was conducted as part of an observational educational study, and no sensitive personal data were disclosed. This research followed the principles of the Declaration of Helsinki and standard human research procedures at the Faculty of Social and Political Sciences, Airlangga University, with reference: 3138AJN3.FISIP/I/PK.03.0212024.

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