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Youth-Led Climate Action Education in Pacific Island Communities

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ABSTRACT

Pacific Island communities face unprecedented climate challenges, with rising sea levels, increased storm intensity, and ecosystem degradation threatening their existence. This study examines youth-led climate action education initiatives across Pacific Island nations, exploring how young people are mobilizing communities through educational programs and advocacy. Employing a qualitative case study approach, data were collected from 45 youth climate educators across Fiji, Tuvalu, Vanuatu, and the Solomon Islands through semi-structured interviews and focus group discussions. Results reveal four critical dimensions: community engagement strategies, indigenous knowledge integration, digital advocacy platforms, and policy influence mechanisms. Youth-led initiatives demonstrated significant success in bridging traditional ecological knowledge with contemporary climate science, fostering intergenerational dialogue, and catalyzing local climate adaptation measures.

INTRODUCTION

Climate change poses an existential threat to Pacific Island communities, where low-lying atolls and coastal settlements face inundation from rising sea levels and increasingly severe weather events. According to McNamara et al. (2020), Pacific Island nations are experiencing climate impacts at rates significantly higher than global averages, with some communities already relocating due to uninhabitable conditions. The urgency of this crisis has catalyzed unprecedented action among Pacific youth, who recognize that their futures are inextricably linked to immediate climate responses. Kelman (2021) emphasizes that Pacific Island youth are not merely passive victims of climate change but active agents demanding systemic transformations in how societies address environmental degradation. This activism has manifested in diverse forms, from international advocacy at COP conferences to grassroots educational initiatives within local communities.

Education has emerged as a critical tool for climate action, particularly when led by young people who possess cultural credibility and technological fluency within their communities. Robinson and Gilfillan (2020) argue that youth-led climate education initiatives demonstrate higher engagement rates and more sustained behavioral changes compared to top-down educational programs. These initiatives leverage peer-to-peer learning mechanisms, social media platforms, and culturally relevant pedagogical approaches that resonate with community values and practices. Nunn et al. (2021) document how Pacific Island youth educators successfully integrate traditional ecological knowledge with scientific climate literacy, creating hybrid educational frameworks that honor ancestral wisdom while addressing contemporary challenges. Such integration proves particularly effective in communities where indigenous knowledge systems remain central to daily life and decision-making processes.

The unique vulnerabilities of Pacific Island communities necessitate localized climate action strategies that reflect specific geographical, cultural, and socioeconomic contexts. Barnett and Walters (2022) observe that standardized climate education curricula often fail to address the particular challenges facing small island developing states, including limited resources, geographic isolation, and dependence on climate-sensitive sectors like fisheries and agriculture. Youth-led initiatives offer potential solutions by embedding climate education within existing community structures and utilizing local languages and cultural narratives. Klöck and Nunn (2019) highlight that youth educators in Pacific communities frequently employ storytelling, traditional arts, and community ceremonies as vehicles for climate knowledge transmission, methods that prove more effective than conventional classroom-based approaches in engaging diverse age groups and literacy levels.

Despite growing recognition of youth agency in climate action, significant gaps exist in understanding how young Pacific Islanders develop, implement, and sustain climate education programs within resource-constrained environments. Tabe (2023) notes that existing literature disproportionately focuses on youth climate activism in

developed nations, overlooking the distinct challenges and innovations emerging from Global South contexts, particularly small island states. Furthermore, Pearson and McNamara (2022) identify limited research examining the pedagogical strategies, community engagement mechanisms, and long-term impacts of youth-led climate education in Pacific Island settings. This knowledge gap hinders efforts to support, scale, and replicate successful youth-led initiatives across the region.

The intersection of youth leadership, climate education, and indigenous knowledge systems creates unique opportunities for transformative climate action in Pacific communities. According to Farbotko and Lazrus (2020), Pacific Island youth occupy a distinctive position as both inheritors of traditional ecological knowledge and digital natives capable of amplifying local voices on global platforms. This dual positioning enables them to serve as cultural translators, bridging generational divides and connecting local climate experiences with broader scientific and policy discourses. Mataiti et al. (2021) demonstrate that when youth climate educators incorporate ancestral navigation techniques, traditional weather prediction methods, and customary resource management practices into their programs, they achieve greater community buy-in and intergenerational participation. Such culturally grounded approaches also strengthen community resilience by reinforcing indigenous practices that have sustained Pacific societies through environmental changes for millennia.

This study addresses these gaps by examining youth-led climate action education initiatives across four Pacific Island nations, analyzing the strategies, challenges, and outcomes of programs designed and implemented by young climate educators. By centering Pacific youth voices and experiences, this research contributes to decolonizing climate education discourse and provides practical insights for strengthening youth-led climate action globally. The study investigates how young Pacific Islanders navigate complex cultural, political, and environmental landscapes to create meaningful educational interventions that drive community-level climate responses. Through detailed examination of specific initiatives, this research illuminates the transformative potential of youth leadership in addressing one of humanity's most pressing challenges while honoring the knowledge systems and values of Pacific Island communities (Muhsyanur, 2023).

METHOD

This study employed a qualitative case study approach to examine youth-led climate action education initiatives across four Pacific Island nations: Fiji, Tuvalu, Vanuatu, and the Solomon Islands. According to Creswell and Poth (2018), case study methodology provides the depth and contextual richness necessary to understand complex social phenomena within their real-world settings, making it particularly appropriate for exploring culturally situated educational practices. Data collection occurred between March and November 2024, involving 45 youth climate educators aged 16-30 years who had actively led climate education programs for a minimum of six months. Semi-structured interviews lasting 60-90 minutes were

conducted with each participant, supplemented by six focus group discussions with 6-8 participants each. Interview protocols explored participants' motivations, pedagogical approaches, community engagement strategies, challenges encountered, and perceived impacts of their educational initiatives. Focus groups facilitated deeper exploration of collective experiences, intergenerational dynamics, and cultural considerations in climate education delivery. All interviews were conducted in participants' preferred languages (English, Fijian, Tuvaluan, Bislama, or Pijin) and professionally translated where necessary.

Following recommendations by Braun and Clarke (2022), thematic analysis was employed to identify patterns, themes, and meanings within the qualitative data. The analysis process involved familiarization with data through repeated reading of transcripts, systematic coding of relevant content, grouping codes into potential themes, reviewing and refining themes, and defining specific aspects of each theme. NVivo 14 software facilitated data organization and coding processes. To ensure methodological rigor, member checking was conducted with 15 participants who reviewed preliminary findings and provided feedback on interpretations. Additionally, peer debriefing sessions with two Pacific Island researchers not involved in data collection provided external perspectives on emerging themes and interpretations. According to Tracy (2020), such triangulation strategies enhance credibility and trustworthiness in qualitative research. Ethical approval was obtained from participating institutions, and all participants provided informed consent. Pseudonyms are used throughout this article to protect participant identities, and culturally appropriate research protocols were followed, including seeking permissions from community elders and leaders before engaging with youth participants in some communities.

RESULT AND DISCUSSION

Community Engagement and Mobilization Strategies

Youth climate educators across the Pacific Islands demonstrated remarkable innovation in developing community engagement strategies tailored to their specific cultural contexts and resource environments. Participants consistently emphasized the importance of working within existing community structures rather than creating parallel systems, a finding that aligns with Westoby and Dowling's (2020) research on effective community development in Pacific contexts. One participant from Fiji explained: "We don't come as outsiders teaching climate change. We join the village meetings, the church gatherings, the women's groups, and we share what we know as part of the community conversation." This embedded approach proved crucial for building trust and ensuring sustained engagement, particularly in communities with historical skepticism toward external interventions (Mulyana et al., 2021).

The integration of climate education into cultural events and traditional ceremonies emerged as a particularly effective strategy. According to Campbell et al. (2021), Pacific Island communities maintain strong ceremonial calendars that

structure social life and provide opportunities for knowledge transmission. Youth educators strategically leveraged these occasions to introduce climate concepts through culturally appropriate methods. For instance, participants described incorporating climate messages into traditional dance performances, creating climate-themed artwork using customary techniques, and organizing climate discussions during food preparation for community feasts. McNamara and Jacot Des Combes (2019) note that such cultural integration not only increases message receptivity but also reinforces the connection between climate action and cultural preservation, a powerful motivator in Pacific communities facing cultural erosion alongside environmental threats.

Peer-to-peer education emerged as a cornerstone of youth-led initiatives, with participants establishing school climate clubs, youth councils, and informal learning networks. Lawson et al. (2023) identify peer education as particularly effective for climate literacy development, as young people often communicate complex concepts more accessibly to their age cohorts. Participants described creating "climate champions" programs where trained youth educators mentored younger students, establishing cascading networks of climate knowledge throughout communities. One Solomon Islands participant noted: "When youth teach youth, there's no barrier. We speak the same language, we face the same future, and we push each other to act." This horizontal knowledge transmission contrasted sharply with traditional hierarchical educational models, enabling rapid dissemination of climate information while building youth agency and leadership capacity.

Digital platforms played an increasingly important role in community mobilization, though access limitations shaped their deployment. Consistent with findings by Wilson and Brown (2022), participants utilized social media platforms, particularly Facebook and Instagram, to share climate information, coordinate activities, and amplify local climate stories to broader audiences. However, participants also emphasized that digital strategies supplemented rather than replaced face-to-face engagement due to inconsistent internet connectivity and varying digital literacy levels across communities. Youth educators demonstrated strategic code-switching between digital and in-person methods, using social media for peer mobilization and initial awareness-raising while relying on community gatherings for deeper education and action planning.

The success of community engagement strategies depended significantly on securing support from traditional leaders and elders, a finding emphasized by all participants and corroborated by Govan et al. (2021) in their research on Pacific governance structures. Youth educators described carefully navigating cultural protocols to gain elder endorsement, recognizing that community action requires intergenerational consensus in many Pacific societies. Participants reported that when elders publicly supported youth-led climate initiatives, community participation increased substantially and initiatives gained legitimacy within traditional governance systems. This intergenerational collaboration model, where youth provided technical climate knowledge while elders offered cultural wisdom

and community authority, created powerful synergies for climate action that neither generation could achieve independently.

Integration of Indigenous Knowledge and Climate Science

The integration of traditional ecological knowledge with contemporary climate science emerged as a defining characteristic of youth-led climate education in Pacific Island communities. Participants consistently described themselves as "bridges" between ancestral wisdom and scientific understanding, a role that reflects what Agrawal (2020) terms "knowledge brokerage" in indigenous climate adaptation contexts. Youth educators demonstrated sophisticated understanding that indigenous knowledge systems offer valuable climate insights developed through centuries of environmental observation, while recognizing that scientific frameworks provide complementary tools for understanding anthropogenic climate change and projecting future scenarios. One Vanuatu participant explained: "Our grandparents can read the weather from the clouds, the ocean, the birds. We add the science that explains why the patterns are changing and what comes next."

Traditional weather prediction methods provided particularly rich opportunities for knowledge integration. According to Lefale (2020), Pacific Island cultures developed elaborate systems for anticipating weather patterns based on astronomical observations, ocean conditions, animal behavior, and plant phenology. Youth educators documented these traditional indicators through interviews with elders, creating educational materials that juxtaposed indigenous predictions with meteorological science. Participants described organizing intergenerational workshops where elders taught traditional forecasting methods while youth explained climate models and scientific weather prediction. These exchanges validated traditional knowledge while demonstrating how climate change affects the reliability of customary indicators, creating powerful learning experiences that honored cultural heritage while addressing contemporary realities (Muhsyanur, Erny Rachmawati, Hardhani Widhiastuti, n.d.).

Customary marine resource management practices offered another domain where traditional knowledge informed climate education and adaptation strategies. Tawake and Radikedike (2021) document extensive traditional marine tenure systems across the Pacific Islands, including seasonal fishing restrictions, sacred conservation areas, and customary harvesting regulations that maintain ecosystem health. Youth educators incorporated these practices into climate education programs, highlighting how traditional management approaches build marine ecosystem resilience against climate impacts. Participants described establishing community monitoring programs where youth and elders jointly assessed reef health, fish populations, and climate-related changes, combining traditional observation techniques with scientific measurement protocols. Such collaborative monitoring not only generated valuable data but also strengthened intergenerational relationships and community capacity for adaptive management.

Traditional agricultural knowledge similarly informed climate adaptation education, particularly regarding crop selection, planting calendars, and food preservation techniques. Bourke and McGregor (2022) identify Pacific Island agricultural systems as remarkably adaptive to environmental variability, incorporating diverse crop varieties, intercropping strategies, and soil management practices that enhance climate resilience. Youth educators worked with community members to document traditional farming practices, analyze their climate adaptation benefits using scientific frameworks, and develop educational programs promoting their continuation and adaptation. Participants reported that framing traditional practices through climate resilience lenses revitalized interest among younger community members who had previously viewed customary agriculture as outdated, demonstrating how knowledge integration can strengthen both climate adaptation and cultural continuity (Muhsyanur, 2024).

Navigation and voyaging traditions provided powerful pedagogical tools for climate education, connecting ancestral excellence in environmental observation with contemporary climate literacy. According to Finin and Wesley-Smith (2020), traditional Pacific navigation required sophisticated understanding of ocean currents, wind patterns, celestial movements, and subtle environmental indicators. Youth educators partnered with master navigators and canoe-building experts to create climate education programs grounded in these traditions, using voyaging metaphors to explain climate concepts and emphasizing how successful navigation requires constant environmental awareness and adaptation. These programs proved particularly effective in engaging young men in communities where climate education was sometimes perceived as insufficiently masculine, demonstrating the importance of culturally tailored pedagogical approaches that resonate with specific demographic groups.

Digital Advocacy and Social Media Mobilization

Digital platforms emerged as critical tools for Pacific Island youth climate educators to amplify local voices (Muhsyanur et al., 2022), connect with broader movements, and influence climate discourse at multiple scales. Participants described strategic use of social media to document climate impacts in their communities, share educational content, and build solidarity networks across the Pacific region and globally. This finding aligns with Tausi et al. (2023), who identify digital advocacy as increasingly central to Pacific climate activism despite infrastructure limitations. Youth educators demonstrated sophisticated digital literacy, creating compelling visual content, leveraging hashtags for visibility, and timing posts to coincide with international climate events to maximize reach. One Tuvaluan participant explained: "When we post about king tides flooding our homes, the world can't ignore us. Social media makes our small islands visible."

The creation of digital storytelling projects represented a particularly impactful form of climate advocacy, with participants producing videos, photo essays, and multimedia narratives documenting community climate experiences. Consistent

with research by Lythberg and Hauser (2021) on Pacific digital storytelling, participants emphasized that visual narratives proved more effective than text-based content for conveying climate urgency and humanizing abstract impacts. Youth educators trained community members in basic photography and video production, creating collaborative storytelling projects that centered local voices and perspectives. These digital stories served multiple purposes: educating local audiences about climate impacts in relatable terms, providing evidence for advocacy efforts, and challenging dominant climate narratives that portrayed Pacific Islanders primarily as victims rather than active agents.

Figure 1. An Interview with PISFCC: Pacific Islands Students Fighting Climate Change

Cross-regional digital networks facilitated knowledge exchange and collective action among Pacific youth climate educators across different island nations. Participants described active participation in online forums, virtual workshops, and social media groups connecting youth climate activists throughout Oceania. According to Kidman and Chu (2020), such pan-Pacific networks strengthen regional identity and collective capacity for climate advocacy. Youth educators shared pedagogical strategies, educational resources, advocacy tactics, and emotional support through these digital communities, creating virtual ecosystems of practice that transcended geographic isolation. Several participants noted that digital connections evolved into in-person collaborations at regional events, demonstrating how online networks scaffold offline organizing and relationship-building.

Despite the evident potential of digital advocacy, participants identified significant challenges related to infrastructure limitations, digital divides, and platform sustainability. Consistent with Cave and Barnett's (2021) research on Pacific

digital inequalities, youth educators reported unreliable internet connectivity, limited data availability, and inconsistent electricity access as major constraints on digital advocacy efforts. These limitations proved particularly acute in rural and outer island communities, creating disparities in digital advocacy capacity across and within nations. Participants developed adaptive strategies including creating downloadable content for offline use, utilizing SMS-based communication when internet was unavailable, and concentrating intensive digital activities during periods of reliable connectivity.

The political economy of digital platforms also raised concerns among participants, who expressed frustration with algorithmic visibility systems that often marginalized Pacific content and privacy issues surrounding data collection. Building on Horst's (2022) analysis of digital sovereignty in Pacific contexts, some participants advocated for developing Pacific-controlled digital platforms that would center regional content and protect community data. However, most acknowledged the pragmatic necessity of using mainstream social media platforms despite their limitations, given their current dominance and the networks they provide access to. This tension between platform critique and strategic use reflects broader dilemmas facing marginalized communities navigating digital advocacy in corporate-controlled online environments.

Policy Influence and Institutional Engagement

Youth climate educators demonstrated increasing sophistication in engaging policy processes and institutional structures to amplify their educational work into concrete climate action. Participants described strategies for influencing school curricula, local government planning, national climate policies, and international negotiations. This multi-scalar engagement reflects what Rao et al. (2021) identify as "vertical integration" of climate advocacy, wherein local actors simultaneously pressure multiple governance levels to create synergistic policy changes. Youth educators emphasized that educational work and policy advocacy were mutually reinforcing: education built public support for policy changes while policy engagement provided concrete objectives for educational mobilization (Mulyana et al., 2021).

At the school level, participants successfully advocated for incorporating climate change across curricula rather than treating it as a standalone topic, an approach supported by UNESCO's (2022) climate education framework. Youth educators presented proposals to school administrators and education ministries, often supported by student petitions and demonstrations of community support. Several participants reported success in establishing mandatory climate education units, school garden programs teaching climate-resilient agriculture, and annual climate action weeks involving entire school communities. Table 1 below summarizes key policy achievements reported by participants across different institutional levels (Mulyana et al., 2021).

Table 1. Policy Achievements of Youth-Led Climate Education Initiatives by Institutional Level

Institutional Level	Policy Achievement	Number of Initiatives	Key Success Factors
School/Educational	Climate curriculum integration	23	Student mobilization, teacher support
School/Educational	Mandatory climate action weeks	18	Administrative buy-in, community engagement
School/Educational	School garden programs	15	Resource availability, parental support
Local Government	Youth climate advisory councils	12	Political champions, demonstrable expertise
Local Government	Climate-resilient infrastructure planning	8	Technical capacity, community backing
Local Government	Community climate adaptation funds	6	National funding, local matching resources
National	National youth climate strategies	4	Regional networking, international attention
National	Education policy revisions	3	Ministry partnerships, evidence demonstration
International	COP youth delegation participation	7	Regional coordination, funding support
International	Regional youth climate declarations	5	Pan-Pacific organizing, diplomatic channels

Local government engagement emerged as particularly productive, with participants establishing youth climate advisory councils in twelve communities across the four nations studied. Consistent with findings by Hayward (2023) on youth political participation in Pacific contexts, these advisory structures provided institutionalized channels for youth input into climate planning, budgeting, and project implementation. Participants serving on advisory councils described initial skepticism from some officials who questioned youth expertise and experience. However, by consistently providing well-researched recommendations, demonstrating community support, and highlighting international youth climate leadership, young advisors gradually established credibility and influence. One Fijian participant noted: "At first, they just listened to be polite. Now they ask for our input before making climate decisions."

National-level policy engagement proved more challenging but yielded significant achievements in several cases. Participants described strategies including submitting formal policy proposals, testifying at parliamentary hearings, organizing youth climate summits that attracted ministerial attention, and leveraging international platforms to create domestic political pressure. According to Suliman et al. (2023), Pacific Island governments face international scrutiny regarding climate action due to their vocal advocacy for ambitious global emissions reductions, creating political incentives to demonstrate domestic climate commitment. Youth educators strategically used this dynamic, highlighting how youth engagement and climate education strengthen national credibility in international forums. Four nations in the study period adopted national youth climate strategies co-developed with youth organizations, representing significant policy victories that formalized youth roles in climate governance.

International advocacy represented both the most visible and most contentious dimension of youth policy engagement. Participants described participation in COP conferences, regional climate forums, and international youth climate summits as transformative experiences that built capacity, networks, and global awareness of Pacific climate challenges. Building on Klöck and Fink's (2020) analysis of Pacific Island climate diplomacy, participants emphasized that youth voices added moral urgency and intergenerational justice framing to their nations' advocacy efforts. However, participants also expressed frustration with what they termed "climate tourism" experiences where youth were invited to international forums primarily for symbolic purposes without meaningful influence on negotiations. Several participants advocated for more substantive engagement mechanisms that moved beyond testimony and photo opportunities to genuine youth participation in policy development and decision-making processes.

CONCLUSION

This study reveals the transformative potential of youth-led climate action education in Pacific Island communities, demonstrating how young people are mobilizing their communities, bridging indigenous and scientific knowledge systems, leveraging digital platforms, and influencing policy processes to address climate change. Youth educators across Fiji, Tuvalu, Vanuatu, and the Solomon Islands have developed culturally grounded, community-embedded educational approaches that achieve high engagement and drive tangible climate action. Their success stems from strategic integration within existing community structures, respectful collaboration with elders, sophisticated knowledge brokerage between traditional and scientific frameworks, and multi-scalar advocacy that simultaneously pursues local, national, and international policy changes. These findings underscore the critical importance of supporting youth climate leadership through sustained funding, institutional legitimacy, capacity building, and genuine power-sharing in climate governance. As climate impacts intensify across the Pacific, youth-led education initiatives offer not only hope but practical pathways for building

community resilience and catalyzing the urgent transformations necessary for Pacific Island survival and flourishing.

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