Working together with remote Indigenous communities to facilitate adapting to using energy wisely

Barriers and enablers

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Working Together with Remote Indigenous Communities to Facilitate Adapting to Using Energy Wisely: Barriers and Enablers

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Abstract

A $12 million Commonwealth funded consortium project trialled energy efficiency initiatives in six remote Indigenous communities over three years. This project, which won several awards, employed and educated over 80 local Yolŋu to educate their fellow community members to use power wisely. The research and evaluation component was designed together by Indigenous and non-Indigenous researchers and entailed ethnography and a local Indigenous co-researcher approach. Sixteen local Yolŋu co-researchers conducted 125 in-depth qualitative interviews with community members across six communities in the local languages. At the beginning of the project, the Yolŋu co-researchers conducted 40 narrative interviews with fellow Indigenous community members to find out how they use power, and to identify barriers to and enablers of using power efficiently. Towards the end of the project, Yolŋu co-researchers conducted 85 in-depth interviews with fellow Indigenous community members and with Yolŋu who had educated community members to evaluate the project. The interpreted and transcribed interviews were analysed using a combination of thematic and narrative strategies (interviews at the start of the project) and of content, thematic and narrative strategies (evaluation interviews). The stories provide rare insights into how Yolŋu used, experienced and interpreted fire or power in the old days, missionary times and government days. The stories identify

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barriers to, and enablers of, Indigenous and non-Indigenous people working together designing and conducting projects. The stories capture how Yolŋu educators and Indigenous community members experienced and interpreted the project—including effective practices, challenges, impediments and recommendations for the future. In this paper, we share the essence of these stories to provide an overview of the key barriers and enablers of Indigenous and non-Indigenous people working together in remote Indigenous communities to use power efficiently. We propose that, for projects with Indigenous people to be effective, non-Indigenous partners need to closely and genuinely work together with remote Indigenous communities prior to applying for funding and implementing projects as well as throughout the projects. The projects need to employ a long-term and adaptive process.

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Keywords: Energy efficiency; Indigenous communities; Collaboration; Enablers; Barriers

1. Introduction

In Australia, nearly 100,000 Indigenous people live in remote communities in a tropical monsoonal climate consisting of a dry and a wet season [1, 2]. Both seasons are characterized by high temperatures over 30 degrees, but the wet season between November and April is experienced as very hot because of high humidity of up to 80% as compared to the lower humidity during the dry season between May and October [3]. Indigenous Australians in remote communities generally classify as low-income earners because of limited education and employment options in remote communities [4].

Power facilitates access to light, cooking and thermal comfort. Indigenous communities are dependent on essential services including power being provided by external providers from government and industry [5]. Ensuring power availability is a constant challenge for Indigenous households. However, the ability to access energy, in turn, influences the frequency and severity of other significant but less obvious interdependent challenges Indigenous communities continue to experience such as loss of traditional knowledges, chronic diseases, mental health issues, employment participation, substance abuse and domestic violence, school attendance and retention rates, and lowered life expectancy [6, 7]. In addition to these challenges, climate change increases the risk that infrastructures, including provisions for power, will be compromised in remote Indigenous communities in Northern Australia [2].

Although households pay for power, because of rising costs of power production and higher costs of providing power in remote Indigenous communities, the provision of power to remote communities tends to be heavily subsidised [5]. Consequently, energy providers are increasingly interested in improving energy efficiency and reducing energy consumption in remote Indigenous communities. Nevertheless, rising electricity and fuel prices create opportunities for Indigenous communities to provide services in monitoring energy; educating the community in energy efficiency; enhancing the energy efficiency of private, community and commercial buildings; supplying renewable energy; and maintaining energy and water infrastructure [5]. Furthermore, new opportunities are emerging for Indigenous communities to (re)build and extend their adaptive capacities based on utilizing their traditional knowledges to utilize the emerging carbon neutral economy and to assist Australia with greenhouse gas emission abatement [6, 10, 11]. These energy related services could not only save energy and carbon but significantly contribute to changing the current detrimental trajectory of Indigenous communities from struggling to thriving by increasing empowerment, self-sufficiency and ecological sustainability, and thus adaptive capacity, of Indigenous communities [5, 6, 12].

These issues can only be addressed and these opportunities can only be utilized if Indigenous communities and non-Indigenous agencies (from different authority levels and with different expertise) are sincerely working together. However, being able to genuinely work together seems to have eluded us so far. A $12 million Commonwealth funded consortium project that trialled energy efficiency initiatives in six remote Indigenous communities in Northern Australia over three years provides some insights into the barriers to, and enablers, of this collaboration.
The key insights from this project are discussed in this paper. After outlining the research design, the key barriers and enablers are discussed. The paper concludes with key recommendations for Indigenous communities and non-Indigenous agencies working together to enable and assist Indigenous communities to adapt to using energy wisely.

2. Project and Research Design: Working Together With Local Yolŋu

To trial energy efficiency education and technologies tailored to Indigenous communities in Northern Australia, this project employed and educated over 80 local Yolŋu across six communities to educate their fellow community members about using power wisely. To evaluate the project design and implementation, the project also included a research and evaluation component. This component was designed together by Indigenous and non-Indigenous researchers, resulting in an ecological community-based participatory action research design that utilized qualitative and quantitative research approaches in a multiple methods design [13, 14, 15, 16], and that utilized an Indigenous co-research approach for the qualitative component. The research team employed and worked together with an experienced Yolŋu researcher as a lead Yolŋu co-researcher, a Yolŋu interpreter proficient in the various Indigenous languages spoken in the participating communities, and local Yolŋu co-researchers in each community.

Over three months, spread across a year, the lead Indigenous and the principal non-Indigenous researcher conducted participant observation in the communities. During this time, they identified and educated 16 local Yolŋu co-researchers to interview their fellow community members in their local languages at the beginning of the project and towards the end of the project. At the beginning of the project, the Yolŋu co-researchers conducted 40 narrative interviews with fellow Indigenous community members to find out how they use power, and to identify barriers to and enablers of using power efficiently. Narrative interviews allow accessing the complexity of personal and contextual factors that influence energy usage and how these factors interact over time [17, 18]. Given that Yolŋu culture is an oral culture, using narratives values and matches the cultural practices of Yolŋu. This alignment enhanced engagement and facilitated disclosure. Towards the end of the project, Yolŋu co-researchers conducted 85 in-depth interviews with fellow Indigenous community members and with Yolŋu who had educated community members to evaluate the project. The interviews combined semi-structured and narrative interview types. In the semi-structured interview, the co-researchers followed an interview guide with questions that covered the topics the consortia wanted to have answered. In the narrative parts of the interview, the co-researchers provided space for Yolŋu to express the stories they wanted to feed back to the consortia. In total, the Yolŋu co-researchers conducted 125 depth qualitative interviews with community members across 6 communities in the local Indigenous languages.

The recorded interviews were interpreted by a trained Indigenous interpreter and fully transcribed. The pre-project interviews were analysed using a combination of thematic and narrative analysis [18, 19]. We used thematic analysis to derive the salient themes regarding experiences, interpretations and actions/interactions directly from the interview data. We employed narrative analysis to sequentially reconstruct the experiences, interpretations and actions/interactions in the form of a narrative to identify processes and linkages. The evaluation interviews were analysed using a combination of content, thematic and narrative analysis [18, 19]. For the content analysis, we developed and used a coding frame that covered the evaluation topics that were of interest to the project team and consortium. To allow the evaluation topics that were of interest to the Yolŋu to emerge from the data, we utilized thematic analysis. To temporarily reconstruct the experiences, interpretations and actions/interactions in accordance with the project process, and to identify processes and linkages between them throughout the course of the project, we made use of narrative analysis.

3. The Project from the perspective of Indigenous People

This culturally appropriate research design provided the space for Yolŋu to share their true and full stories. The stories provide rare insights into how Yolŋu experienced and interpreted fire/power and water in the old days, during missionary times, and during government days. The stories identify barriers to, and enablers of, Indigenous and non-Indigenous people working together designing, conducting and evaluating projects. The stories capture how Yolŋu educators and households experienced and interpreted the project – what they felt worked, what was challenging or
hard, and what they believe is needed for future projects to work better. We share the essence of these stories to provide an overview of the key barriers and enablers of Indigenous and non-Indigenous people working together in remote Indigenous communities. Combined, the findings explore how psychological, historical, natural, structural, cultural, societal, spiritual, economic, and political factors on Indigenous and non-Indigenous sides interact to hinder or facilitate collaboration. The stories present the Indigenous perspective of the project. That is, the stories provide insights into how Indigenous people living in the communities in which the project was conducted experienced and perceived the project. Subjective perspectives are important as the way people subjectively perceive and interpret reality influences how they will act and interact [20].

3.1. Barriers of Indigenous and non-Indigenous People Working Together

Taken together, the narratives collected at the beginning of the project in the various communities identified several barriers that impede the ability of Yolŋu to utilise modern day power wisely. Specifically, the key issue in Indigenous communities—overcrowding, combined with the welfare system, high unemployment and chronic disease—create dependencies that hinder Yolŋu using from power efficiently and paying for power cards\(^1\). Widespread perceptions of oppression and inequality since colonalisation create resistance and mistrust. Non-Indigenous Australians not listening and not working in genuine partnership with Yolŋu further contribute to resistance and mistrust. Constant changes in policies, governance structures and programs as well as imposition of policies, structures and programs without sincere consultation or justification preclude Yolŋu from learning and understanding non-Indigenous ways. The strongest barrier to effective use of power that emerged from the analysis of the interviews across all six communities was the perception that non-Indigenous people are only sharing their knowledge but are ignoring existing traditional ancestral Yolŋu knowledges and cultural practices regarding fire and education. As a result, according to the participants, Western education is largely ineffective, provoking confusion and mistrust among Yolŋu.

The analysis of the evaluation interviews towards the end of the project suggests that, although the project represents an excellent start in being more culturally appropriate, respectful and responsive, several project features limited the success of the project. The key issues that limited the effectiveness of the project included:

- being initiated by government agencies to fulfill the needs and interests of non-Indigenous Australians (top-down project)
- being short-term
- focusing on only one problem the community experiences
- focusing on the power consumption of individual Yolŋu, the barriers individuals are facing, and changing their individual behaviours in ways that non-Indigenous people believe are wise
- not considering the maintainance of technologies and retrofits provided
- insufficiently indentifying individual and social barriers and neglecting identifying inherent strengths before designing the project
- developing the education stories and devices in isolation and passing them on over four generations
- approaching and educating commonly only the principal tenant
- insufficiently testing the education stories and devices in one initial community

Critically, Yolŋu educators and householders emphasised repeatedly that the project was too short for Yolŋu to fully understand how to use power wisely, to afford comprehensive and long-lasting behaviour change, and to educate all community members. From their perspective the education had only just begun. The educators observed that many

\(^1\) Indigenous people living in remote communities in Arnhem Land pay their power via pre-paid power cards that are inserted into an electricity meter installed on the outside of each house. The value of the card is credited to the meter. If the meter runs out of credit, the power is disconnected.
Yolŋu do not understand the power and water stories yet and are confused, and that many Yolŋu still need assistance with using power and water wisely. Many educators also shared that only when the project is ending that many more Yolŋu in their communities are becoming interested and wanting to know more about using power efficiently. Several educators and householders indicated that many Yolŋu households do not yet have technologies and retrofits provided by the project and are waiting for the devices to be installed\(^2\). Several educators and householders are concerned that the power story will die and Yolŋu will forget what they have been learning because the education is not being continued and reinforced.

The analysis of the data shows that many Yolŋu educators expressed their pain, sadness, anger, dissatisfaction and disappointment that the project was ending. Some of the once excited, proud, and confident Yolŋu educators became even ashamed. The educators felt that they are letting their communities down because they experience that many of their fellow community members still do not understand, have not received the education yet, and are forgetting the power stories and are reverting to how they used power before the project. They are deeply concerned that the project ending will contribute to their communities drifting back into experiencing more of the problems which are commonly experienced in remote Indigenous communities.

3.2. Enablers of Indigenous and non-Indigenous People Working Together

The analysis of the interviews with Yolŋu across the six communities identified and clarified many enablers that represent strength and resources. If they would be utilized, these strength and resources could empower Yolŋu to use power more efficiently. The analysis of the data indicates that fire was, and still is, perceived as one essential element for survival. Thus, fire was traditionally highly respected, cared for and protected. Traditional Yolŋu cosmology, knowledges and cultural practices, particularly those pertaining to fire, resulting in Yolŋu being intimately and reciprocally connected with the land and natural environment, and feeling responsible for caring for nature. This connection and feeling responsibility for caring for nature could be utilised to inspire and motivate Yolŋu to use power more efficiently.

Yolŋu educators across the communities reported that many Yolŋu still know, understand, use, and prefer ancestral ways of using fire. For instance, many Yolŋu living in remote communities are using fire rather than stoves to cook, sit outside in shaded areas rather than using air conditioning and sleep outside the house instead of using air conditioning or heaters. During the cooler dry season, Yolŋu often sleep around the fire. As a result, Yolŋu already use only a relatively small amount of power compared to the power usage in major urban cities in Northern Australia (29.91 kWh per day). During the interviews, many older Yolŋu frequently expressed a strong desire to return to their ancestral ways more fully. These findings suggest that facilitating Yolŋu using the ancestral ways of living without power more fully would increase energy efficiency while fulfilling a need and desire in Yolŋu.

The highly sophisticated kinship system and the practice of reciprocity among kin emerged from the data analysis as other key enablers of energy efficiency. The kinship system connects much larger numbers of people than in Western societies and reciprocity obligates kin to engage in reciprocal giving and receiving [21, 22]. The participants shared many stories of the kinship system and of reciprocity operating in their communities. Community members look at each other and help each other staying connected to power by sharing ways of saving power or lending power cards to other community members. This finding points to the great value of the kinship system and reciprocity for the dissemination of power education. The practice of reciprocity being designed to maintain harmony among and between nature and humans [21, 22] further reiterates the finding that linking the education stories to nature would hold a great potential to motivate Yolŋu to change those behaviours that waste power. The data indicating that knowledge and education strategies used in Aboriginal culture are highly sophisticated is supported by the literature [21, 22]. This finding suggests that acquiring and utilizing existing knowledge relevant to Yolŋu using power more wisely and traditional education strategies would not only be

\(^2\) To evaluate the effectiveness of the technologies and retrofits, the project did not provide the technologies and retrofits to all households in a community to have a control group to assess against.
culturally respectful but also increase the effectiveness of the energy efficiency education. In their accounts, many participants emphasised that Yolŋu want to work together with non-Indigenous Australians and want to better know and understand the deep power and water stories. This willingness to work together and learn opens the door to working together to increase energy efficiency.

The analysis of the evaluation interviews revealed that, from the perspective of Yolŋu, the project was well-needed, helpful and useful. In contrast to most projects conducted in Indigenous communities, many participating Yolŋu agreed that the project addressed a need of the communities and often conducted the project in ways that were culturally appropriate, respectful, and responsive. Importantly, Yolŋu commonly regarded this project as the first project they experienced in which Yolŋu and non-Indigenous people have worked well together in several respects. In particular, the analysis suggest that the following key practices increased the effectiveness of this project:

- employing and educating local Yolŋu as educators to educate their communities about power
- Yolŋu educators being educated in Yolŋu languages
- Yolŋu educators working as a team under the supervision of Yolŋu or non-Indigenous community members and non-Indigenous people supporting the Yolŋu teams throughout the project
- non-Indigenous people supporting Yolŋu to assume the lead in their communities
- non-Indigenous people repeatedly returning to the communities to support and respond to the needs and ideas of the Yolŋu educators and their communities
- Yolŋu educators educating fellow community members in local Yolŋu languages

The comparison of the analysis of the pre-project and evaluation data indicates that these project features started addressing fundamental barriers identified in the ‘pre’-project interviews most importantly that non-Indigenous people never explained Western knowledges or explained the knowledges in ways that Yolŋu could relate to and understand. The analysis shows that the collaboration and education empowered Yolŋu, facilitating trust, credibility and understanding. Many Yolŋu educators and householders perceived the project as culturally appropriate and, thus, increasingly trusted the project and supported the project by participating. As a result of the project, according to the participant accounts, more Yolŋu have acquired a better understanding of how to use power more wisely, are becoming interested and want to know more about power, and are using power more efficiently.

4. Discussion

In essence, the findings show that for projects with Indigenous people to be effective, non-indigenous agencies need to closely and genuinely work together with remote Indigenous communities prior to applying for funding and implementing projects as well as throughout the project. The projects need to employ a long-term and adaptive process, and need to fulfill the needs and interests of both indigenous communities and non-Indigenous society. The key barriers identified need to be addressed and resolved; the key enablers indicate opportunities for facilitating efficient energy use that need to be facilitated and strengthened.

The findings suggest that employing and educating a team of local Indigenous community members as educators to educate their fellow community members in the local Yolŋu languages, and that ensuring that non-Indigenous people repeatedly visit the communities and facilitate Yolŋu educators leading the education in their communities, are vital to the success of projects with remote Indigenous communities. In addition, the following specific strategies emerged from the findings as critical keys to enhancing the effectiveness of projects with remote Indigenous communities in culturally appropriate, respectful and responsive ways:

- work together with elders
- employ a long-term approach with flexible milestones
- consider the context in which Indigenous people live that influence their power usage (e.g. stores selling inefficient appliances, security lights using high voltage blubs and having no sensor; house design inappropriate for living in the tropics and increasing power usage; lack of Indigenous maintenance personnel)
- partner with existing relevant local Indigenous and non-Indigenous resources (e.g., electricians, plumbers, store managers, rangers)
- consider power usage by non-Indigenous service providers (e.g., police, schools, clinic) and by non-Indigenous people living in communities
- consider holistically existing problems and strengths inherent in the communities
- have Indigenous and non-Indigenous researchers working together to identify and clarify the psychosocial barriers and enablers in-depth before designing the project using culturally appropriate research approaches
- have Indigenous communities and non-Indigenous agencies design together pathways for addressing barriers and facilitating enablers identified
- consult non-Indigenous community members especially those working in the topic area (e.g., power and water: electricians and plumbers)
- facilitate Indigenous people using their ancestral ways
- provide the deep, true and full stories about reasons for the project, and about the need to use power efficiently
- focus on education rather than devices and granting sufficient time for the education
- use two-way education – simultaneously non-Indigenous people learn from Indigenous people about their knowledges and Indigenous people learn from non-Indigenous people about Western knowledges
- develop education and education resources together with the communities (especially elders, organisations specialising in developing and implementing resources that bridge the different worldviews (e.g., Aboriginal Resource Development Service (ARDS)), relevant trades people)
- comprehensively test education stories and devices, and getting honest feedback from indigenous and non-Indigenous community members in one community before rolling out in other communities
- address existing confusions, misunderstandings and gaps in understanding at the start of the education
- providing the foundation stories, linking the education to Indigenous knowledges and to caring for land/country, and providing budgeting education
- use traditional education approaches
- educate the entire household and children at school
- incorporate education into school curriculum
- educate the household in the afternoons, evenings and/or weekends
- utilize Indigenous radio
- offer devices to all community members and consider long-term maintainance of devices
- employ local Indigenous community members on an on-going basis as educators

Facilitating Indigenous communities and non-Indigenous agencies effectively working together in partnership to create long-term holistic projects that are tailored to particular communities would require substantial changes to current state, territory and federal government funding and programme development strategies. Implementing these key overarching recommendations would necessitate bi-partisan support at a territory and federal government level. Associated government departments would be required to collaborate across departmental portfolios and budgets. Funding would need to be adaptive, such as two phase-projects or flexible milestones, and sustainable in the long-term. Research and evaluation would need to comprise quantitative and qualitative components. Quantitative research will allow projects to identify changes in power consumption. Qualitative research will enable projects to access in culturally and ethically appropriate ways the lived experience of Indigenous people using power and participating in projects to identify and understand the current ways of power usage, the network of individual and contextual barriers and enablers that influence power usage, and the ways in which the project worked and did not work throughout and after the project [23]. Interestingly, many of the key general recommendations we provide have been suggested for decades [24-28]. We hope that with our research providing practical specific recommendations we can contribute to remote Indigenous communities and non-Indigenous agencies genuinely collaborating.

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