

Increasing Awareness of Renewable Energy for a Better Life for the Indonesian Migrant Worker Community in Penang Malaysia

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(Received March 11, 2024; Revised August 12, 2024; Accepted August 20, 2024)

Abstract

A community service team from Universitas Mercu Buana made a project initiative to increase the awareness of renewable energy for the Indonesian migrant worker community in Penang Malaysia. The goal of this project is to raise community awareness of environmental issues in response to providing a better life for Indonesian migrant workers. The primary goal is to establish sustainable behaviors and to encourage community involvement, especially among Indonesian migrant workers abroad. Through the use of a participatory strategy, the involvement included skill-sharing sessions and awareness campaigns. This needed to be done in order to make the community feel responsible for their action and aim for a better environment, hence a better life. The foundation of the approach was built on cooperative partnerships with each stakeholder that encouraged shared accountability. The results showed that the Indonesian migrant worker community's awareness had significantly increased, which resulted in the adoption of eco-friendly behavior. To validate the renewable energy transfer knowledge, the team then applied a questionnaire, especially question no.8 quoted "The community really feels the benefits of the community service program provided". Using this method the team accumulated 93.75% satisfaction that renewable energy transfer knowledge has increased the knowledge and awareness of renewable energy among the participants of Indonesian Migrant Workers in Penang, Malaysia.

Keywords: *community engagement, Indonesian migrant worker, Malaysia, Penang, renewable energy*

How to Cite:

Hakim, G. P. N., Alaydrus, M., & Umairah, U. (2024). Increasing awareness of renewable energy for a better life for the Indonesian migrant worker community in Penang Malaysia. *Journal of Innovation and Community Engagement*, 5(4), 208-219.
<https://doi.org/10.28932/ice.v5i4.8503>

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Introduction

The recent emergence of climate change has led to a rise in public awareness of using clean energy, which is free from pollution and can be renewed. This increases the trend regarding the use of renewable energy which is cheap and widely available from nature (Kurniawan et al., 2022). Many households have started doing this, for example changing gas stoves to electric stoves (Azizi Yundi Haekal & Moljoadie Rahmada Mulia Wardhana, 2023), where the electric stove will then be powered by electric energy originating from solar cells (Pahiyanti et al., 2021). Switching from gas-fired stoves to solar cell-powered electric stoves offers many benefits, both for the environment and the household. This shift encourages sustainable living, reduces carbon emissions, and contributes to global efforts to combat climate change.

Although there is a shift in this trend, however, this only happens in big cities such as Jakarta. Almost no shifts occurred in villages or in areas outside big cities. This shows that there is a lack of information dissemination regarding the use of renewable energy in cooking in rural households or in many areas. While the initial investment in solar panels may seem expensive, the long-term savings on energy bills, coupled with potential government incentives for the use of renewable energy, make this transition economically viable. This refers to the example of the village development transition through renewable energy in Rawasari Village, Jambi (Wardhana & Ma'rifatullah, 2019). As technology advances and costs decrease, widespread use of solar cell-powered electric stoves is becoming increasingly possible, encouraging a cleaner and more sustainable cooking environment. With this project result, it is concluded that if information about the benefits of using renewable energy, even if it is given to people with only limited education, it will be successful if it can be continuously maintained.

This article provided a report on community service to Indonesian migrant workers who work on Penang Island, Malaysia. In this work, the community service team collaborated with the NGO PERMAI to provide community service to the Indonesian migrant workers there. The aim of this community service is to increase the knowledge and awareness of Indonesian migrant workers about renewable energy. With this in mind, it is expected to increase and give Indonesian migrant workers encouragement to shift or do transition to renewable energy. This transition in the end will ultimately improve the quality of Indonesian migrant workers' lives whether they plan to stay in Malaysia to work or they plan return to Indonesia.

Methods

This section elaborates on the method for choosing community service activity, partner, target, and also learning method so this community service can be successfully achieved.

Community Service Title

According to the community service engagement roadmap Universitas Mercu Buana from year 2021-2025 (RIPkM UMB 2021-2025), in 2024 the plan was to give training for green building technology for commercial building energy saving (Iskandar et al., 2022).

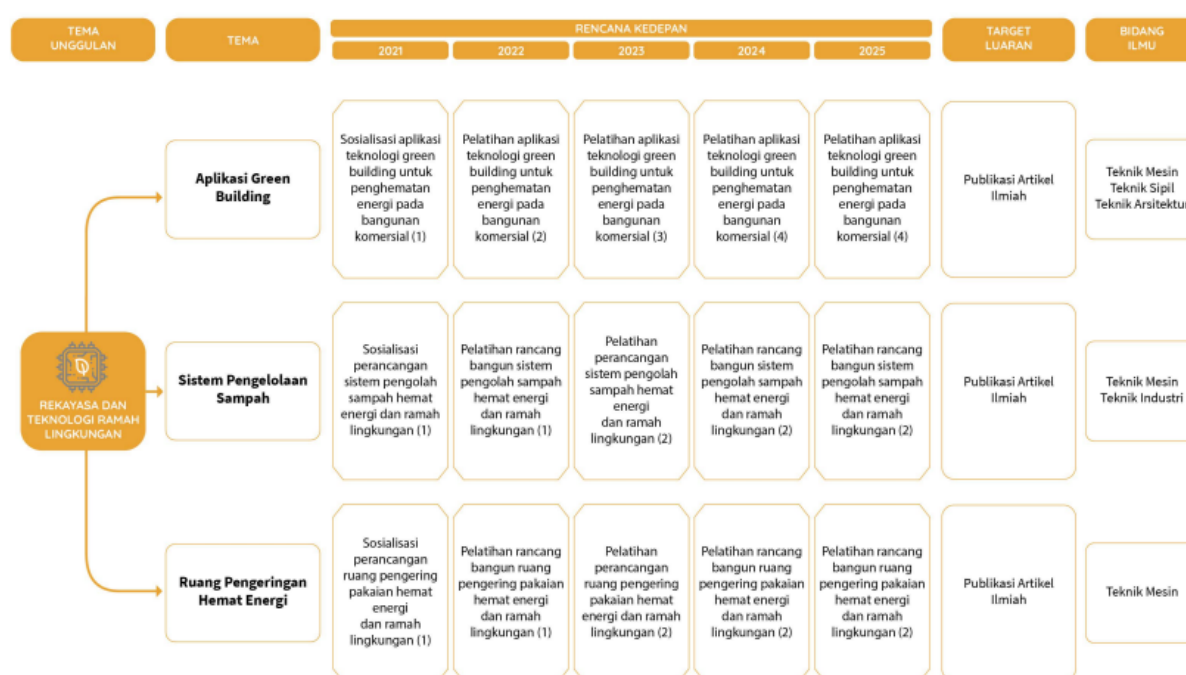


Fig. 1. Community service roadmap Universitas Mercu Buana year 2021-2025 (Tim Penyusun RIPPKM UMB, 2020)

As shown in Figure 1, there are several community service engagement activities from the community service engagement roadmap Universitas Mercu Buana 2021-2025. In this figure, the Indonesian language is used as a national language in Universitas Mercu Buana for teaching and for everyday conversation. There are major differences in the community service engagement roadmap Universitas Mercu Buana 2016-2021 such as wireless technology (Firdausi, 2019), digital security (Suni & Maulana, 2020), simulation (Wijaya et al., 2020) and others (Muslim et al., 2017). As shown in Figure 1, the Electrical Engineering Department has a common program with other departments in Universitas Mercu Buana such as *Teknik Mesin* (mechanical engineering), *Teknik Sipil* (civil engineering), and *Teknik Arsitektur* (architectural

engineering). Therefore from 2021 until 2025, there have been common activities for community service engagement which is green building technology application training for energy savings in commercial buildings. The output target of this activity would be article publication in an international journal with a community service activities theme such as awareness of renewable energy transition.

Community Service Partner and Target

The flowchart in Figure 2 shows the strategy on how the team choose and target the community service partner.

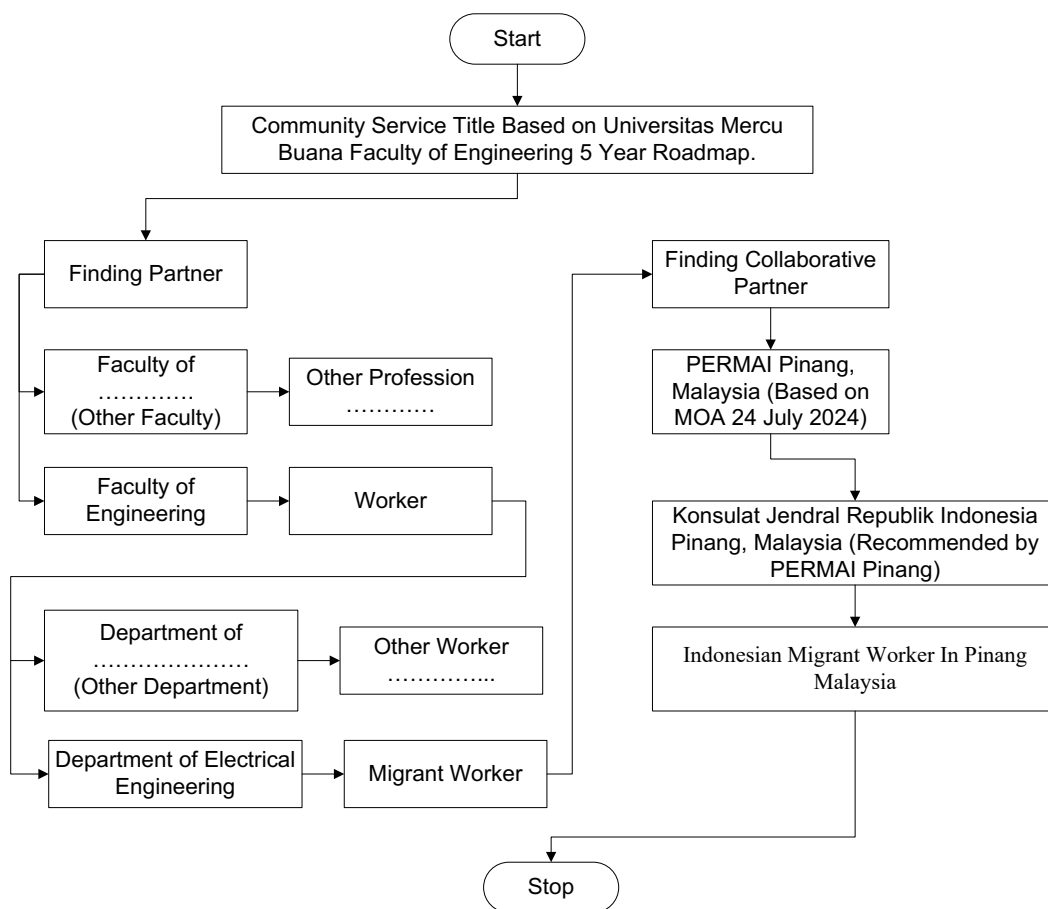


Fig. 2. The strategy of choosing the community service target

The lack of information related to the use of renewable energy in daily life was also experienced by the Indonesian migrant worker community in Penang, Malaysia. Even though Indonesian migrant workers in Malaysia consist of various levels, many of them are workers with a low level of education (Alunaza et al., 2022). NGOs such as PERMAI (Indonesian

Community Growth) on the island of Penang, Malaysia also agree on this problem, especially towards migrant children (Sahureka, 2024).

PERMAI stands for Pertumbuhan Masyarakat Indonesia in Penang, Malaysia. PERMAI is a non-political and non-governmental NGO engaged in the field of social and cultural education. PERMAI members consist of the Indonesian community domiciled in Malaysia, among others: expatriates, entrepreneurs, lecturers, teachers, students, and workers in Malaysia. PERMAI as a community is trying to be humble and friendly, ready to mingle with the initiative to build prosperity and harmony between the Indonesian community and the local community through interaction, tolerance, adaptation, and contribution without distinguishing race, tribe, belief, and religion. PERMAI members consist of various communities from various walks of life throughout Indonesia with different backgrounds. PERMAI makes efforts to synergize the available excesses by sharing with the less fortunate communities so that its philosophy is that the strong would help the weak. PERMAI would simply like to help and support the Indonesian government in serving the welfare of the Indonesian community in Penang, Malaysia. PERMAI also strives to collaborate with parties who are willing to synergize or transfer knowledge in the field of e-commerce, fintech, digital technology, and other specialized skills that are suitable to establish social and cultural cooperation between the Indonesian and Malaysian communities. PERMAI strives to be an incubator to produce community members who have special skills or expertise in order to be able to get jobs with higher positions and salaries or at least equivalent to other nationalities working in Malaysia. PERMAI acts as a national ambassador abroad, who always defends or preserves Indonesian culture and national identity which is based on the Indonesian constitution which is based on Pancasila. PERMAI is monitored under KJRI (*Konsulat Jendral Republik Indonesia*) Penang which does several visits to give updates regarding information from the Malaysian government (Suharto, 2021). With a lot of Indonesian migrant worker problems that include economic, social, legal, and other aspects of Malaysia (Liow, 2003), PERMAI tries to help Indonesian migrant workers by giving them education and counseling to help decrease the Indonesian migrant worker problem.

Method for Learning

Information about how to choose the community service activity and its learning method that had been done in Penang, Malaysia, is shown by the flowchart in Figure 3. In this community service, a proposal was given to Indonesian migrant workers for an information-sharing session

that would be carried out onsite. According to Dewi (Dewi, 2018), there are six modern and conventional learning methods which are tutorials, lectures, resistance, discussions, laboratory activities, and public work. These methods need to be combined with proportional and necessary methods that are modern and conventional oriented. However, in this community service activity, there were only 3 of them applied, which are; tutorial, lectures, and discussion learning methods. These 3 methods were chosen because of the short time duration, with only a day available to transfer the proposed knowledge to Indonesian migrant workers.

This community service applied modern learning models such as problem-based learning models, cooperative learning models, and learning models to improve thinking skills (Dewi, 2018). This was done so that information regarding the transition to renewable energy can be easily understood by Indonesian migrant workers.

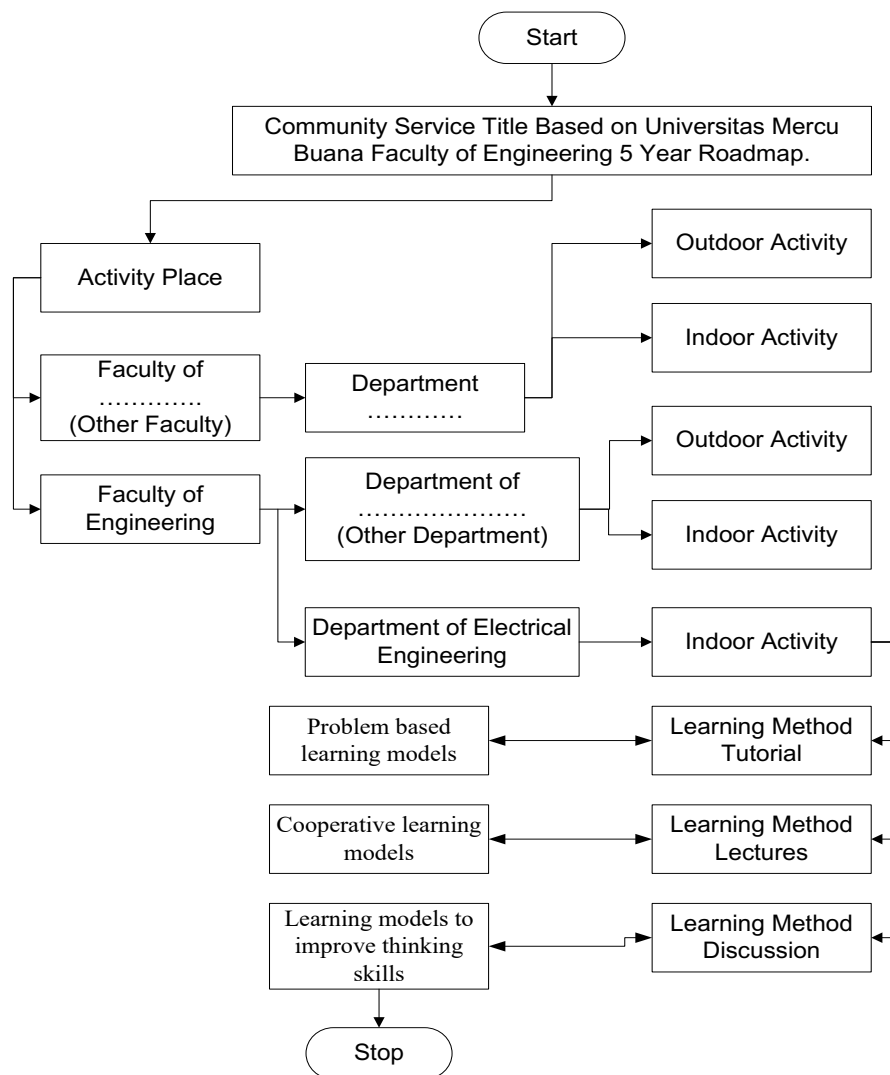


Fig. 3. The strategy of choosing the community service learning model and learning method based on partner accommodation

Results and Discussions

This section explains the implementation result of the community service activities.

Results

The community service activities in collaboration with *Konsulat Jendral Republik Indonesia* Penang and PERMAI Penang were successfully been completed on January 28, 2024, in Penang, Malaysia. The Indonesian migrant workers' participation documentation is shown in Figure 4.



Fig. 4. Community service for Indonesian migrant workers participant

In the training event, the rector of Universitas Mercu Buana (UMB), Prof. Dr. Ir. Andi Ardiansyah, M.Eng, the head of PERMAI Penang, Mr. Eddy Virgo, and the general consulate of the Republic of Indonesia in Penang, Mr. Wanton Saragih also gave insight into the mind of Indonesian migrant workers. The documentation of the event is shown in Figure 5.

Their insights were needed in order to give a boost in encouragement for Indonesian migrant workers to learn a new thing whether in this occasion would be renewable energy or to become a lifelong learner. Mr. Anton Saragih also gave statement that the presence of Indonesian universities to provide education and training for Indonesian migrant workers was very much needed, as fully quoted: “*UMB adalah universitas pertama yang datang ke Penang melakukan pelatihan dan literasi, semoga akan ada universitas lain dari Indonesia yang mengikuti jejak Universitas Mercu Buana melakukan pengabdian masyarakat di Penang, Malaysia*”. Prof. Dr. Ir. Andi Ardiansyah, M.Eng, in his insight, gave a statement so Indonesian migrant workers could utilize the latest technology for migrant workers, both technology that helps with work, media technology, and industrial technology so as to maximize work achievements.

Humanistic use of technology so that it suits the needs and interests of Indonesian migrant workers, as fully quoted: “*Penggunaan teknologi secara cerdas dengan emosi positif dalam membangun karir yang cemerlang*”. Meanwhile, Mr. Eddy Virgo expressed very high appreciation to Universitas Mercu Buana for paying attention to Indonesian migrant workers in Penang and hopes that the community service collaboration with PERMAI (Indonesian society of Pulau Pinang Malaysia) could continue indefinitely.



Fig. 5. Community Service for Indonesian migrant workers insight before renewable energy session (a) insight given by KJRI Penang, Wanton Saragih, (b) insight given by President of Universitas Mercu Buana, Prof. Dr. Ir. Andi Ardiansyah, M.Eng, (c) insight given by head of PERMAI Penang Eddy Virgo

After insight session, the event then continued with providing material about the renewable energy transition. The most important materials regarding the renewable energy transition is shown in Figure 6, while the documentation for training is shown in Figure 7.



Fig. 6. Community service for Indonesian migrant workers on renewable energy transition material (a) fossil energy make us sick, (b) encouragement to change to renewable energy



Fig. 7. Community service for Indonesian migrant workers on renewable energy transition training session

The training event then continued with a tutorial to build device based on renewable energy. In this event the team provided study case for electrical charging and lighting. The study case device based on renewable energy is shown in Figure 8.



Fig. 8. Community service for Indonesian migrant workers tutorial session, the study case device based on renewable energy

The event then continued with discussions about the renewable energy transition and renewable energy tutorials as seen in Figure 9.



Fig. 9. Community service for Indonesian migrant workers discussion session

Discussions

The learning model is intended as a pattern of interaction between students and lecturers in classes involving strategy, approaches, methods, and learning techniques applied in the implementation of these community service activities, using a learning model aims to make it more effective to achieve the learning goal, which is renewable energy transfer knowledge. The indicators are lecturers and Indonesian migrant workers focus on learning material, then the lecturer transfers lesson content to Indonesian migrant workers. The workers also easily catch the content of the lesson so that the time available for one learning material can be utilized efficiently and effectively. To be able to evaluate whether this renewable energy transfer knowledge was effective or not, then the questionnaire method was employed to validate it. Based on the questionnaire on renewable energy transfer knowledge one can see that from a total of 32 participants, 26 participants answered very satisfied, 4 participants answered satisfied, and 2 participants answered quite satisfied, which accumulated 81.25% satisfaction. Furthermore, when the team analyzed using question no.8 which quoted as “The community really feels the benefits of the community service program provided”, from a total of 32 participants, 30 participants answered very satisfied, 1 participant answered satisfied, and 1 participant answered quite satisfied, which accumulated 93.75%. Using this indicator, it can be concluded that renewable energy transfer knowledge has increased the knowledge and awareness about renewable energy among the participants of Indonesian migrant workers in Penang, Malaysia.

Conclusion

In the community service engagement that was held in Penang, Malaysia, the team proposed to target the Indonesian migrant workers in order to increase their quality of life. In this event,

to make it easy for the participants to absorb the renewable energy material, the team applied learning methods such as tutorials, lectures, and discussions, while for the learning model, the team applied problem-based, cooperative, and improve thinking skills models. To validate the renewable energy transfer knowledge, the team then applied a questionnaire, especially question no.8 which quoted “The community really feels the benefits of the community service program provided”. Using this method the team has accumulated 93.75% satisfaction that renewable energy transfer knowledge increases the knowledge and awareness of renewable energy among the participants of Indonesian migrant workers in Penang, Malaysia.

Acknowledgements

We would like to express our sincere gratitude to the *Konsulat Jendral Republik Indonesia* Penang Wanton Saragih, President of Universitas Mercu Buana Prof. Dr. Ir. Andi Ardiansyah, M.Eng, and the head of PERMAI Penang Eddy Virgo for their support in our community service engagement in Penang Malaysia.

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