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AI Literacy and Entrepreneurship Education for Human Capital Development among Indonesian Migrants in Kuala Lumpur

Indah Wahyu Utami[1*], Rahmaniyah Dwi Astuti[2], Sharina Osman[3], Ihsan Kandung Adirangga[4], Radit Satria Alfareza[5]
[1,4,5]Universitas Duta Bangsa Surakarta
[2]Universitas Sebelas Maret
[3]Universiti Kuala Lumpur, Malaysia
Corresponding Author: Indah Wahyu Utami indah_wahyu@udb.ac.id

A R T I C L E I N F O

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A B S T R A C T

The program reached three main goals: it helped improve digital learning by using responsible generative AI tools, it boosted entrepreneurial thinking through real business projects, and it made organizational governance and volunteer management better and more effective. This initiative supports Indonesia's main goals for developing human resources and helps achieve the SDGs related to education, decent work, reduced inequalities, and partnerships. The English abstract had just one paragraph and did not exceed 120 words in total. The summary should explain what the research is trying to achieve or how the paper adds something new to what is already known. Tell me about the variables or ideas you tested if they are based on qualities, give a brief explanation of how you did your research and who was part of it, and also mention when you collected and looked at your data.

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INTRODUCTION

Many Indonesian families have settled in Malaysia because of the movement of migrant workers, and this has caused ongoing difficulties in making sure that the children of these migrants can get an education. Migrant workers play an important role in helping the economies of their home countries and the countries they move to.However, the children of these workers might struggle to get proper education because of their legal situation, complicated rules, financial challenges, and a lack of good schools (International Labour Organization [ILO], 2022; Heryati et al., 2026). Community-based and non-formal education programs are important because they offer different learning options for migrant children who face challenges in getting into formal schools (UNESCO, 2021; Aini et al., 2025).

One well-known community effort is Sanggar Bimbingan (SB) Kampung Bharu, which is situated in Kuala Lumpur, Malaysia. SB Kampung Bharu is supported by the Embassy of the Republic of Indonesia in Kuala Lumpur and is run under the guidance of Pimpinan Cabang Istimewa Muhammadiyah in Malaysia.It offers help with learning, helps build good character, and provides social support to around 25 to 40 Indonesian tenagers who have moved to Malaysia.These children are between the ages of 10 and 20. Learning activities depend a lot on volunteer teachers and local community helpers. Even though it plays an important role, SB Kampung Bharu faces many different problems in providing long-lasting education. Students and volunteers aren't very familiar with new digital tools and need proper help to use AI in a good, smart, safe, and fair way in school settings.This is shown in studies by Casal-Otero et al.(2023), Lintner (2024), and UNESCO (2023).

1. Lack of Structured Entrepreneurship Education: Educational activities are primarily focused on basic academic tutoring, leaving a gap in practical life skills, entrepreneurial mindsets, and digital business competencies that are increasingly important for future economic self-reliance (European Commission, 2019; Maritz et al., 2022; Paul et al., 2023).
2. Volunteer and Organizational Capacity Constraints: The center experiences high volunteer turnover and a lack of systematic training in leadership, classroom management, and organizational governance.

To deal with these main issues, a combined model was introduced that uses Science and Technology (IPTEKS) to empower people. This model includes teaching AI literacy, promoting entrepreneurship education, and developing human capital and organizational skills. This international effort involving Universitas Duta Bangsa Surakarta, Universitas Sebelas Maret Surakarta, UniKL Business School Malaysia, and PCIM Malaysia aims to create a community-focused education model that can be copied and kept going over time. The introduction is provided here; you can explain the reasons for doing something logically or based on experience, or give the background of your service process. You are also needed to give a clear explanation of the community service work you did. It might be found in the description of a specific sample (like a special or unique one), in adding more ideas to a theory, or in a surprising result (if it's

something new). A short and clear starting point about the topic is really important in this service process.

Adding AI skills, teaching entrepreneurship, and improving people's abilities is especially important for migrant learning groups.This is because education problems go beyond just getting access to learning materials—they also include building skills that help people succeed in the future. AI literacy can help students and teachers use digital tools better and in a responsible way, while learning about entrepreneurship gives chances to build creativity, improve problem-solving abilities, and understand more about money and business. At the same time, it's important to build up volunteer strength so that these skills can keep being passed on and really become part of the learning environment. So, we need a community empowerment approach that brings together technology skills, business start-up abilities, and personal growth in a long-term, informal learning environment. This approach makes SB Kampung Bharu more than just a place for academic help—it creates a learning environment that helps migrant students and volunteers get ready for the changes brought by digital transformation.

IMPLEMENTATION AND METHODS

This program adopted a Participatory Community Empowerment Approach, engaging students, volunteer teachers, and management at SB Kampung Bharu Kuala Lumpur. The implementation was structured into five major stages:

Needs Assessment ➔ Capacity Building ➔ Mentoring & Implementation ➔ Monitoring & Evaluation ➔ Sustainability & Dissemination

1. Needs Assessment Phase: Conducted through direct field observations, semi-structured interviews, and Focus Group Discussions (FGDs) with partner management and volunteer teachers at Wisma Sabarudin, Jl. Raja Alang, Kampung Bharu, Kuala Lumpur.
2. Capacity Building Workshops: Executed in three integrated materials about:

a. AI Literacy & Digital Learning material: Practical training on generative AI tools for learning, prompt engineering, content creation, and ethical digital practices.
b. Entrepreneurship and digital business workshops focused on identifying business opportunities, creating simple business models, using digital marketing strategies, and planning basic finances, showing how important digital skills are becoming in today's entrepreneurship teaching (Maritz et al., 2022; Paul et al., 2023). Leadership & Human Capital Development material: Interactive training for volunteers on communication, team dynamics, mentoring strategies, and organizational governance.

3. Mentoring and Project Implementation: Participants were guided through project-based learning, enabling students to translate entrepreneurial concepts into practical business ideas and digital outputs. These hands-on methods are becoming more accepted as a way to build entrepreneurial skills and digital abilities (Chen et al., 2022). Students came up with small ideas for new products or businesses and did some digital tasks, while volunteers helped redesign the steps in lessons to make them better. Monitoring and Evaluation: Program effectiveness was measured using pre-test and post-test assessments, participant feedback surveys, and observational evaluations of project outputs.
4. Sustainability & Partnership Building: Development of standardized learning modules, training media, and formalizing institutional ties between universities and PCIM Malaysia.

RESULTS AND DISCUSSION

Partner Problems and Intervention Alignment

The implementation directly responded to the key problems identified during the initial assessment. Table 1 summarizes the alignment between partner issues, implemented solutions, and achieved outputs.

Table 1. Alignment of Partner Problems, Solutions, and Program Outputs

Priority Partner Issues	Implemented IPTEKS Solution	Main Output Achieved
Limited AI Literacy & Digital Competencies	AI Literacy & Digital Learning Training Program	AI Literacy Educational Module, Interactive Media, Training Videos
Scarce Entrepreneurship Exposure & Future Skills	Entrepreneurship & Digital Business Education Program	Entrepreneurship Module, Student Business Innovation Projects
Human Capital & Organizational Capacity Constraints	Leadership & Volunteer Capacity Building Program	Volunteer Development Guidebook, Organizational Sustainability Framework

IPTEKS Implementation and Field Activities

1. AI Literacy and Digital Learning Empowerment
   Participants were introduced to accessible AI tools designed to support educational productivity. Students were taught how to use generative AI for creating stories, designing visual content, and solving problems. These activities match up with new ways of teaching AI that focus on hands-on learning, solving real problems, and building understanding of AI (Casal-Otero et al., 2023; Liu & Zhong, 2024). Ethical guidelines focusing on academic integrity, data privacy, responsible use, and digital safety were emphasized throughout the sessions (UNESCO, 2023).
2. Entrepreneurship and Digital Business Education
   To foster self-reliance, project-based business simulation activities were conducted. Students worked in small groups to identify local market opportunities, conceptualize simple products, and design basic social media marketing graphics using digital design tools.
3. Human Capital and Volunteer Leadership Development
   a. Human capital development activities aim to improve communication, teamwork, mentoring skills, knowledge sharing, and how the organization is run. This is because building human capital isn't just about having technical skills, but also about having good organizational and interpersonal abilities (Armstrong & Taylor, 2020).
   b. Evaluation and Output Impact

The quantitative and qualitative evaluation results showed significant improvements across all core dimensions:

1. Cognitive & Technical Skills (Pre-test vs. Post-test):
   The results showed that participants improved in their understanding of AI and digital skills, as seen by the higher scores on the post-test compared to the pre-test. The improvement shows that hands-on and real-world training helped participants build their understanding of AI and their skills in using digital tools.
2. Entrepreneurial Readiness:
   Students made working models of business plans and created digital ads, showing they are more creative, flexible, and good at working together as a team.
3. Organizational Governance:
   SB Kampung Bharu created a clear plan for managing volunteers and a digital place to store learning materials, making it easier for volunteers to pass on their knowledge to new groups.

The results show that the program's success wasn't just about learning new technical skills, but also about how well participants could use those skills in real learning situations and business activities. Participants got hands-on experience using generative AI for storytelling, creating visual content, and solving problems.This helped them link digital technology with real-life learning needs. Similarly, the entrepreneurship activities helped students go from finding market opportunities to creating basic business ideas and making promotional materials. This mix of learning new things and using that knowledge in real situations is important because building skills becomes more valuable when people can turn what they've learned into clear results. The program also gave volunteer teachers a chance to improve their mentoring and sharing of knowledge, which helped keep learning activities going in SB Kampung Bharu.

The outcomes directly support national development goals (Asta Cita) regarding human resource quality enhancement and digital transformation, while advancing SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), SDG 10 (Reduced Inequalities), and SDG 17 (Partnerships for the Goals). The following are some photos of the community service activities carried out there, as shown in the image below:



Figure1. Mentoring Activities and Community Service Materials by the Team and Participants

CONCLUSIONS AND RECOMMENDATIONS

The International Community Service program at Sanggar Bimbingan Kampung Bharu Kuala Lumpur successfully introduced an integrated framework combining Artificial Intelligence literacy, entrepreneurship education, and volunteer leadership development. The intervention effectively elevated digital competence among migrant students and teachers, fostered entrepreneurial mindsets, and strengthened institutional capacity.

Recommendations: Future programs should strengthen continuous mentoring after the training stage. SB Kampung Bharu should also continue developing AI-supported learning activities, entrepreneurship projects, and volunteer capacity development. Further evaluation should monitor the long-term effects of the program on learning productivity, entrepreneurial behavior, volunteer performance, and organizational sustainability. The results show that a combined approach to community empowerment, which includes teaching about AI, starting businesses, and improving people's skills, can offer a better way to support education for Indonesian migrant groups outside traditional school systems.

The program brought together digital skills, entrepreneurial abilities, and organizational strength by using hands-on learning, project work, guidance from mentors, and opportunities for volunteering. This integration allowed participants to gain knowledge and also use their digital and entrepreneurial skills in their learning tasks and possible business projects. At the organization level, building up volunteer abilities and creating organized learning materials helped ensure the program's benefits continued even after the intervention ended. The program also shows how working together between different organizations and countries is important for solving problems related to education and skills development in migrant communities.

The work of universities, international academic partners, and community organizations added different kinds of help in sharing knowledge, providing training, offering guidance, and supporting institutions. The experience at SB Kampung Bharu shows that building a sustainable community needs more than just short-term training.It also needs ongoing support and guidance, easy access to learning materials, active involvement from volunteers, and a long-term commitment from organizations and institutions. So, the model created through this program could be really helpful for other community-based education projects that support migrant students in different situations.It can guide them in dealing with the challenges and chances that come with changes in technology and the skills needed for the future.

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