



Basic First Aid and Physical Health Training for the Tourism Community of Karian Reservoir in Priority Development Areas, Lebak Regency, Banten

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ABSTRAK

Program layanan masyarakat ini merupakan inisiatif hibah dari Kementerian Pendidikan Tinggi Republik Indonesia dalam rangka Skema Pemberdayaan Masyarakat Badan Eksekutif Mahasiswa (BEM) Tahun 2025. Bendungan Karian semakin populer sebagai destinasi wisata sehingga meningkatkan potensi risiko kecelakaan akibat aktivitas air dan kegiatan luar ruang. Namun, kemampuan masyarakat sekitar dalam memberikan pertolongan pertama serta menjaga kebugaran fisik masih terbatas dan didukung oleh fasilitas keselamatan yang belum memadai. Program ini memberikan pelatihan pertolongan pertama dasar dan kesehatan fisik kepada masyarakat di kawasan sekitar Bendungan Karian untuk meningkatkan kesiapsiagaan darurat. Materi pelatihan mencakup keterampilan CPR dasar, penanganan luka ringan, serta edukasi kebugaran untuk mendorong gaya hidup sehat. Metode pelaksanaan meliputi ceramah, demonstrasi, simulasi, dan praktik terarah. Program ini juga menghadirkan inovasi berupa kotak pertolongan pertama komunitas dan poster infografis berbasis Augmented Reality (AR). Hasil evaluasi menunjukkan peningkatan pengetahuan dan keterampilan peserta dengan rata-rata skor meningkat +16 poin. Peserta merespons positif terhadap inovasi teknologi yang diperkenalkan, dan diharapkan dapat memperkuat kesiapsiagaan darurat dan berkontribusi pada lingkungan pariwisata yang lebih aman, sehat, dan berkelanjutan di Bendungan Karian.

Kata kunci: Pelatihan; Pertolongan Pertama; Pendidikan Kesehatan Fisik

ABSTRACT

This community service program is a grant initiative from the Ministry of Higher Education of the Republic of Indonesia under the 2025 Student Executive Board (BEM) Community Empowerment Scheme. Karian Dam has become an increasingly popular tourist destination, which raises the potential risk of accidents due to water-based and outdoor activities. However, the local community's ability to provide first aid and maintain physical fitness is still limited, and safety facilities at the tourist site remain inadequate. This program provides basic first aid and physical health training to residents living around the Karian Dam area to improve emergency preparedness. The training materials include basic CPR skills, minor wound treatment, and fitness education to promote a healthy lifestyle. The implementation methods include lectures, demonstrations, simulations, and guided practice. The program also introduces innovations such as a community first aid kit and interactive infographic posters based on Augmented Reality (AR). Evaluation results show a significant improvement in participants' knowledge and skills, with an average score increase of +16 points. Participants responded positively to the technological innovations introduced and are expected to strengthen emergency preparedness and contribute to a safer, healthier, and more sustainable tourism environment at Karian Dam.

Keywords: Training; First Aid; Physical Health Education.



INTRODUCTION

Destinations that have rapidly developed within a priority area for tourism enhancement. The increasing scale of tourism activities has driven the need for improved community preparedness in managing potential health risks and accidents involving visitors as well as local residents. However, many residents around the reservoir still lack essential knowledge and skills in first aid response and do not fully understand the importance of maintaining physical fitness as a support for their daily activities linked to tourism.

This community engagement program aims to provide basic first aid training and physical health education for community members who are directly or indirectly involved in tourism activities around Karian Reservoir located in Pajagan Village, Sajira District, Lebak Regency, Banten Province. The program includes counseling sessions, hands-on practice for treating minor injuries, Cardiopulmonary Resuscitation (CPR), and guidance on maintaining a healthy lifestyle and physical fitness. The implementation adopts a participatory approach, featuring interactive training led by medical personnel, fitness instructors, and speakers from the local health and tourism offices. The activities are designed to be periodically carried out and tailored to the needs and readiness of the community.

Short-term benefits of this program include improved community preparedness in handling health emergencies and the development of awareness regarding the importance of physical fitness. Meanwhile, the long-term benefit lies in the creation of a resilient tourism community—healthy and responsive to emergencies—ultimately enhancing the reputation and attractiveness of Karian Reservoir as a tourism destination.

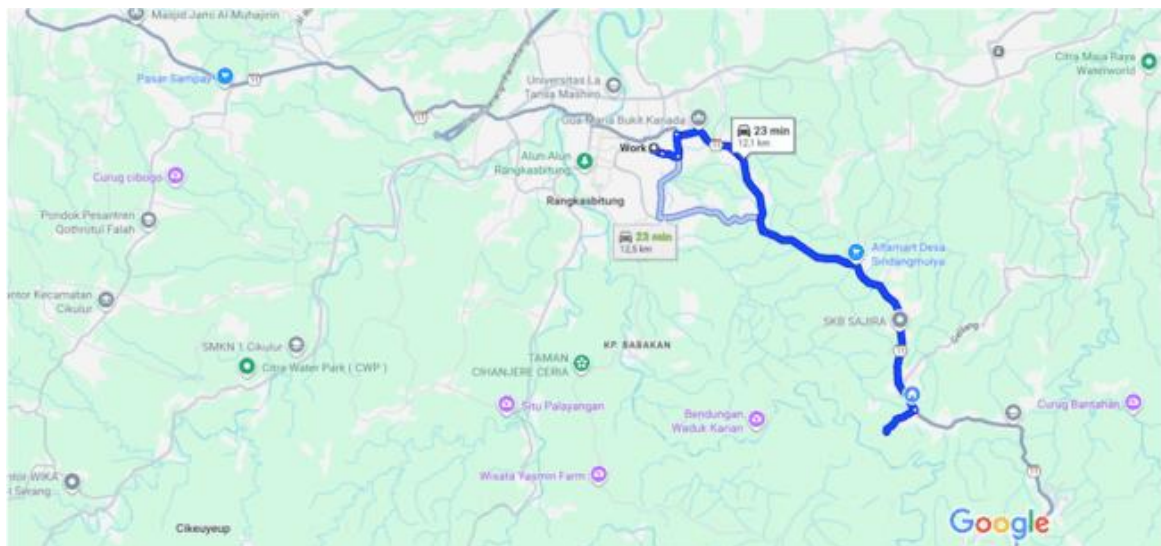


Figure 1. Geographic location of Partner 1 and the university

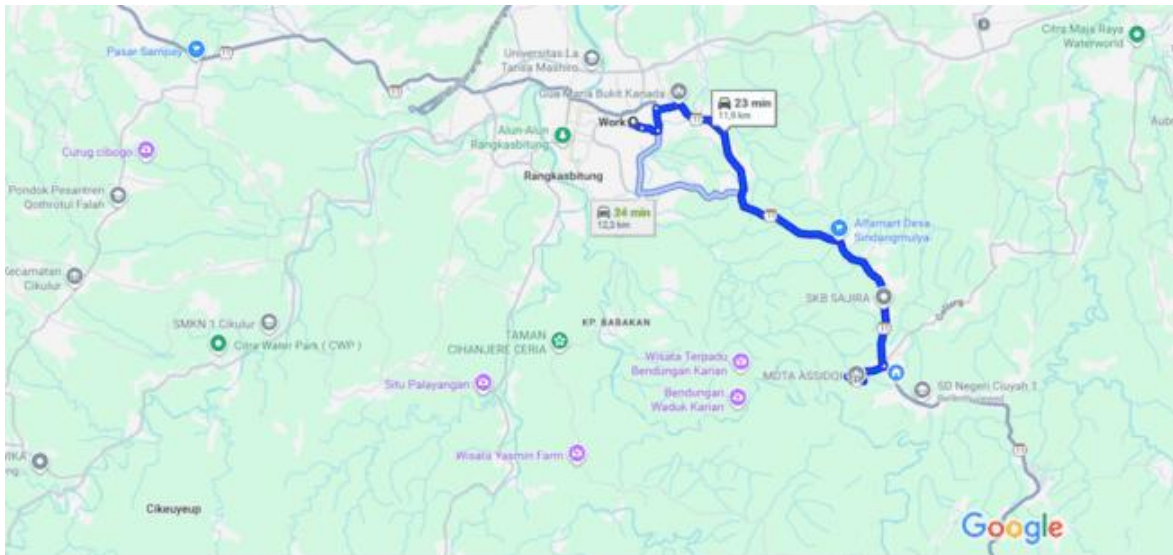


Figure 2. Geographic location of Partner 2 and the university

This community service initiative also aligns with Indonesia's national development agenda, which emphasizes strengthening human resources, science and technology, health, sports performance, gender equality, and empowerment of women, youth, and people with disabilities. Additionally, the program contributes to Sustainable Development Goals (SDGs), specifically those related to human resource competency in science and technology and the growth contribution of tourism to the national economy.

Based on preliminary observations and coordination with local government authorities and tourism actors, several safety and health-related issues were identified. The low level of first aid skills among residents poses a major challenge, as many have not yet mastered early response procedures for common accidents such as minor cuts, fainting, drowning, and other injuries associated with tourism activities. Furthermore, there is no established Standard Operating Procedure (SOP) for emergency handling in either land-based or water-based tourism zones.

Another issue is the lack of trained emergency response personnel on-site, along with limited safety equipment such as community first aid kits, spare life vests, or portable stretchers. In addition, residents demonstrate limited awareness regarding the necessity of physical fitness for tourism-related work that requires strong stamina and resilience. Healthy lifestyle education, including active daily routines, balanced nutrition, and regular exercise, is still minimal.

There has also been no structured, continuous first aid or physical fitness training provided in the region. Previous activities have been ceremonial in nature and inconsistent, thus not contributing to long-term capacity development. Moreover, limited access to credible information and professional guidance from educational, health, and tourism institutions has hindered community self-reliance in establishing safety standards in tourism services. Therefore, the solution offered is the implementation of structured first aid training and physical health education so that local tourism services can improve in quality by incorporating safety standards and increased attention to community and visitor health.

IMPLEMENTATION METHOD

This program involved members of the community who actively participated in the training activities. The participants consisted of local residents who were interested in improving their knowledge and skills related to educational innovation and community empowerment. Most participants had limited experience in using digital learning tools; therefore, the program aimed to provide practical guidance and training to enhance their competencies. The intervention implemented in this program consisted of several components designed to support participants' learning and skill development. These components included training sessions, interactive discussions, practical exercises, and the use of digital learning materials. Through these activities, participants were introduced to innovative educational approaches and technology-based learning tools that could support their daily educational practices.

The implementation of the program was carried out in several stages. The first stage involved preparation and coordination with community representatives to identify their needs and expectations. The second stage consisted of the implementation of training sessions and mentoring activities. During this phase, participants engaged in hands-on practice and collaborative discussions to strengthen their understanding of the materials presented. Monitoring and evaluation activities were conducted to assess the effectiveness of the program. The evaluation process included observations, participant feedback, and documentation of learning outcomes. The results of this evaluation were used to identify improvements in participants' knowledge and skills as well as to provide recommendations for future program development.



Figure 3. Activity Implementation Stages

Furthermore, there are other reasons why this innovation aligns with the community's needs, including: The SIGAP WADUK application: People have access to smartphones, and this application helps them learn first aid steps and health exercises independently and offline. Community First Aid Kits: The lack of first aid kits in public places can be addressed with community kits, which can be used by anyone immediately in the event of a minor incident. Posters and Infographics: Helping the community understand first aid steps visually. This is particularly helpful for residents with low literacy levels. SIGAP Healthy Gymnastics: Encourages an active and healthy lifestyle that can be practiced in the village hall or in the yard, and is suitable for all ages.

Ideal technology transfer methods include: Initial Socialization and Introduction: Disseminating information about the program and technology to be implemented through meetings with residents, community leaders, and tourism

awareness groups (Pokdarwis), along with light simulations and demonstrations of product benefits to create a sense of need and interest among residents. This program is implemented by the Student Executive Board (BEM) of Setia Budhi University, Rangkasbitung. Field Training and Mentoring: Direct training by lecturers and students on how to use the application, the contents of a first aid kit, and how to respond to minor accidents. Field simulations: Residents are encouraged to practice using a first aid kit, scanning AR posters, and performing group exercises. Door-to-door mentoring for the elderly or vulnerable groups who are less active in group activities. This program is implemented by a community service team consisting of lecturers from the BEM of Setia Budhi University, Rangkasbitung. Formation of the SIGAP COMMUNITY Team: A local team (village volunteers, youth, and health workers) will be formed to act as "technology agents." This team will also receive training certificates as recognition and motivation. This implementation is carried out by the Student Executive Board (BEM) of Setia Budhi University, Rangkasbitung. Product Distribution and Placement: First aid kits are placed in strategic locations, such as tourist posts, food stalls, and village halls. AR posters are displayed in public places, and their functions are explained through demonstrations. This implementation is carried out by the community service team and the BEM of Setia Budhi University, Rangkasbitung. Monitoring and Feedback: Every two weeks, visits or communication with partners are conducted to assess the product's effectiveness. Residents can provide development suggestions via printed forms or WhatsApp. Evaluation is conducted through observation and short interviews. This implementation is carried out by the BEM of Setia Budhi University, Rangkasbitung.

Replication and Capacity Building: If successful, this technology can be replicated in other neighborhood units (RTs) and hamlets around the Karian Reservoir. The training materials are stored in printed and digital modules, allowing them to be reused by partners independently of the community service team. The implementation is carried out by the community service implementation team and the Student Executive Board of Setia Budhi Rangkasbitung University.

This program adopts a community-based intervention approach in which the community is actively involved in the planning and implementation stages. Community engagement is an important principle in designing sustainable health promotion programs because it encourages local ownership and participation in problem-solving processes (Sartika, 2020). Through this participatory approach, residents are not only recipients of the program but also play an active role in maintaining and developing the innovations introduced.

In addition, the technology transfer process is carried out through a series of educational activities, including socialization, training, and direct mentoring. These steps are designed to ensure that community members understand how to use the technology and can apply it independently in daily situations. Effective technology transfer in community programs requires practical demonstrations and continuous assistance so that the community can gradually adopt and utilize the innovations provided (Suharto, T.H, 2022).

Furthermore, monitoring and evaluation activities are conducted periodically to assess the effectiveness of the program implementation and identify areas that require improvement. Monitoring and evaluation are essential components in community development programs because they help measure program outcomes, ensure accountability, and provide feedback for program sustainability and future replication (Jumriah, 2024).

ACTIVITY RESULTS AND DISCUSSION

The technology and innovations used in this community service program were developed to address key challenges faced by the community around the Karian Reservoir, a priority development area. This area has high tourism potential but lacks the necessary human resources and infrastructure to support visitor safety and health. Therefore, this community service program offers simple technology-based solutions and practical innovations that can be readily adopted by the local community.

The objectives of the developed technology and innovation are: Increasing community awareness and skills in providing first aid; Encouraging healthy and active lifestyles through physical fitness monitoring and practice; Providing easy-to-implement community-based education and safety tools; Connecting the community to access health information and services through a local technology approach. The improvement in participants' learning engagement during the program also indicates that the use of structured teaching materials and contextual learning activities plays an important role in enhancing learning outcomes. Previous studies have shown that the development of innovative learning models can improve students' motivation and participation in educational activities (Aryadi & Arini, 2023).



Figure 4: IPR-registered Training Module

A5 (148 x 210 mm)

Top & Bottom: 2 cm

Left & Right: 2.5 cm

Module with more than 40 pages

Cover: Art carton 230–260 gsm

HVS 80–100 gsm for text

The technology and innovation specifications include Basic First Aid and Physical Health training for the Karian Reservoir Tourist Community, which consists of training modules containing: The SIGAP WADUK training serves as a first aid education tool and a physical fitness guide for the community, which can be used independently or in community activities. This training serves to: Provide interactive tutorials on CPR, fainting, wounds, animal bites, choking, and other issues; Provide a menu of light physical exercises for adults and the elderly (exercise, stretching, breathing exercises); Display a questionnaire for early detection of common illness symptoms (hypertension, diabetes, and mild stroke); Provide a "Panic" feature that connects users to emergency numbers (health centers or local volunteers); and Can be run offline, making it suitable for areas with limited internet access. Furthermore, the training activities provided participants with opportunities to apply practical knowledge through interactive learning approaches. This approach is consistent with research emphasizing that well-designed instructional programs can support more effective and meaningful learning experiences for participants (Arini, 2022).

The First Aid Kit serves as a first aid kit available at strategic points in the Karian Reservoir tourist area and is managed by the local community. This product consists of: A waterproof bag labeled "Community First Aid Kit - SIGAP WADUK." Standard contents: 2 pairs of medical gloves, 3 rolls of elastic bandages, 10 sheets of sterile gauze, 1 blunt medical scissors, 1 bottle of antiseptic (povidone iodine 60ml), 1 roll plaster and wound plaster, 1 spare cloth mask, "First Aid Steps" pocket book (with QR code to video tutorial), Equipped with a lightweight logistics box made of transparent PP plastic, Placed at stalls, guard posts, or docks by tourism awareness groups (pokdarwis).

General Description of Training Results: The training took place in the Karian Reservoir tourist area, Telaga Sangiang Tanjung Tourism Community Group (Pokdarwis), Pajagan Village, Sajira District, Lebak Regency, Banten, on December 4, 2025. Forty participants from two Pokdarwis groups: the Sinday Samudera Pokdarwis and the Telaga Sangiang Tanjung Pokdarwis participated. Pre- and post-tests were administered to the 40 participants in the First Aid and Physical Health training for the Karian Reservoir Tourism Community. The assessment results showed a significant increase in their understanding and basic first aid skills after the training.

Table 1. Statistical Summary of Training Assessment

Evaluation Component	Pre-test	Post-test
Mean Score	53	69
Highest Score	69	87
Lowest Score	41	50
Score Range	28	37

Table 2. Mastery Percentage Comparison

Category		Pre-test	Post-test
Participants Achieving Mastery (≥ 65)		10 (25%)	32 (80%)
Not Yet Mastered		30 (75%)	8 (20%)

The minimum passing grade (KKM) used in this training was ≥ 65 . The percentage increase in passing grade was +55%. This indicates that the majority of participants achieved the competency targets after participating in the training. The results of this program indicate that the use of technology-based learning resources can improve participants' understanding and engagement during the training process. This finding is consistent with previous studies showing that artificial intelligence and digital learning tools can enhance educational accessibility and learning effectiveness (Ojha et al., 2023).

Based on the pre- and post-test evaluation results, the majority of participants experienced an increase in knowledge and skills after the training. This indicates that the training program was able to assist participants in achieving the targeted basic first aid and physical health competencies. Therefore, it can be concluded that this training was effective and contributed positively to improving community preparedness for emergencies in the Karian Reservoir tourist area. Participants initially showed hesitation in using AI-based tools; however, after the training sessions, their attitudes became more positive. Similar findings were reported by Bochniarz et al. (2022), who found that familiarity and understanding of AI applications can reduce distrust and increase acceptance among learners. The program also contributes to strengthening community knowledge and awareness through collaborative learning activities. Similar findings were reported in previous studies which highlighted that community-based educational programs can improve participants' competencies and encourage positive behavioral changes in learning and social environments (Setiawati & Solihatulmilah, 2019).

The development of digital learning materials also supports the implementation of flexible and technology-supported learning environments. Previous research suggests that hypertext-based and digital teaching materials can improve the effectiveness of learning processes, especially in modern educational contexts (Arini et al., 2022).



Figure 5. Implementation of the Opening of the BEM Community Service Program



Figure 6. Implementation of Basic First Aid Training



Figure 7. Implementation of Basic First Aid Training using Augmented Reality media through Virtual Reality

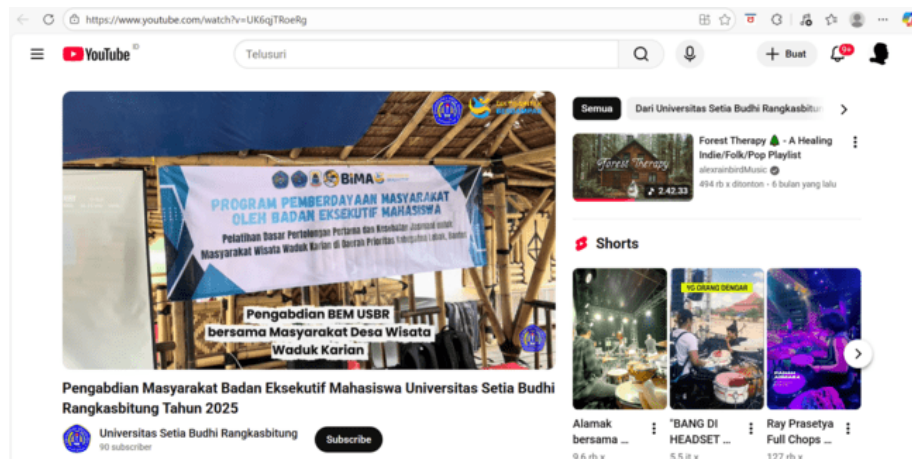


Figure 8. Publication of activity videos on the KampusUSBR Youtube page
<https://youtu.be/UK6qjTRoeRg>

CONCLUSION AND SUGGESTION

The community service program, which included basic first aid and physical health training for the Karian Reservoir tourist community, was successfully implemented and had a positive impact on improving the participants' competencies. Evaluation results showed that participants' knowledge and skills significantly improved after the training, as evidenced by higher post-test scores compared to pre-test scores and increased confidence in taking initial action in emergency situations. Furthermore, the community became more aware of the importance of maintaining physical fitness to support tourism activities that require peak physical condition.

Through mentoring, hands-on practice, and the use of innovative educational media such as the SIGAP WADUK app, community first aid kits, and interactive posters, this activity strengthened emergency preparedness and response in the tourism environment. Therefore, it is hoped that this training will be sustainable and expanded to enable more people in the Karian Reservoir area to acquire first aid skills, thereby creating a safe, healthy, and sustainable tourism environment.

While this training has had a positive impact on improving community understanding and skills, several limitations remain. The relatively short training duration prevented in-depth coverage of all aspects of first aid, particularly in the practical aspects of handling more complex emergencies. Furthermore, the limited number of instructors and supporting equipment, such as CPR dummies and simulation equipment, resulted in uneven support for participants during the practical training.

Differences in literacy levels and technological skills among participants also presented challenges in delivering the material, particularly regarding the use of the SIGAP WADUK application. Limited internet access in some areas also hampered the optimization of digital media. The limited reach of participants to the Karian Reservoir area resulted in uneven community capacity building across the tourism area.

Furthermore, this training lacked a fully structured sustainability mechanism, requiring continued support to ensure consistent first aid practices. These limitations

are expected to serve as a basis for evaluation for improvement and development of future community service programs, ensuring their benefits reach a wider community.

REFERENCES

- Arini, I. (2022). Evaluasi program pembelajaran tematik di sekolah dasar kelas bawah SDN 1 Ciuyah. *Jurnal Keilmuan dan Kependidikan Dasar*, 14(1), 27–36.
- Arini, I., Aryadi, D., & Usmaedi. (2022). Development of hypertext-based teaching materials in curriculum and learning courses during the COVID-19 pandemic. *JTP: Jurnal Teknologi Pendidikan*, 24(3), 295–306. <https://doi.org/10.21009/jtp.v24i3.29181>
- Arini, I., Fachrudin, F., & Japar, M. (2024). The use of Siakadcloud LMS in the implementation of learning organization at Universitas Setia Budhi Rangkasbitung. *Sarcouncil Journal of Arts and Literature*, 3(2), 1–7.
- Arini, I., Suharto, T. H., Setiawati, E., Iskandar, R., & Amaliah, H. (2024). Pelatihan desain workbook printable bertema Ibadahku untuk guru di RA Al-Muttaqin. *Jurnal Pengabdian kepada Masyarakat*, 5(4), 94–107.
- Aryadi, D. (2019). Pembelajaran gerak dasar lari melalui permainan. *Jurnal Prestasi*, 6(3), 87–96.
- Aryadi, D., & Arini, I. (2023). Teaching sepak takraw by developing a motion ball-based soccer training model. *QALAMUNA: Jurnal Pendidikan, Sosial, dan Agama*, 15(1), 503–514.
- Bochniarz, K. T., Czerwiński, S. K., Sawicki, A., & Atroszko, P. A. (2022). Attitudes to AI among high school students: Understanding distrust towards humans will not help us understand distrust towards AI. *Personality and Individual Differences*, 185, 111277. <https://doi.org/10.1016/j.paid.2021.111277>
- Jumriah, et al. (2024). Analysis of the use of GPT chat to improve student performance. *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, 5(1), 127–136.
- Ojha, S., Narendra, A., Mohapatra, S., & Misra, I. (2023). From robots to books: An introduction to smart applications of AI in education (AIED). *arXiv*. <https://arxiv.org/abs/2301.10026>
- Sartika, N. S., et al. (2020). Effect of pedagogic, professional competency, and work motivation toward Indonesian primary school teachers' performance. *Systematic Reviews in Pharmacy*, 11(9), 517–526.
- Setiawati, E., Nurtiani, A. T., Usmaedi, A., Tandilo, A., et al. (2020). Develop green behaviour through ecoliteracy for early children. *Systematic Reviews in Pharmacy*, 11(9), 268–274.
- Setiawati, E., & Solihatulmilah, E. (2019). Permainan ular tangga dalam meningkatkan kemampuan moral anak. *PETIK: Jurnal Pendidikan Teknologi Informasi dan Komunikasi*, 5(1), 85–91.
- Suharto, T. H., Hidayat, T., et al. (2022). Impact of training methods and anxieties of students on their mastery of backstroke swimming skills. *Journal of Physical Education and Sport*, 22(12), 3135–3142.