# ENHANCING LEARNING WITH ARTIFICIAL INTELLIGENCE FOR YADIKA 1 PRIMARY SCHOOL TEACHERS

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## ABSTRACT

This community service project aimed at elevating the teaching skills of our community service partner, a primary school for children aged 7-12 named SD Yadika 1, located in Jakarta-Indonesia. The educator in this institution has yet to become familiar with technology such as Artificial Intelligence (AI). One of the best implementations of AI that holds the potential to help educators is ChatGPT. The partner must upgrade digital literacy, specifically ChatGPT, to enrich the education process. In this publication, we address the quality of teachers' digital literacy, specifically the knowledge to use ChatGPT AI. The solution is a socialization and training project for the teachers of our partner. The project utilized a training and hands-on approach, accompanied by pre and post-tests, to evaluate its effectiveness. Results of the project indicate improvement in teachers' knowledge, with an average increase of 22% observed in their pre-test and post-test scores. A remarkable 100% of the participants expressed positive feedback that the project was executed well and provided substantial benefits. This publication highlights the successful application of AI and supports the notion that integrating AI into education will have a positive impact on primary school teachers.

**Keywords**: community service, Artificial Intelligence, ChatGPT, primary school, teacher

## 1. INTRODUCTION

It is undeniable that the quality of human resources greatly affects the progress of a country. Although Indonesia is a country that has abundant natural resources, without proper management and mastery of technology, it will not be able to catch up with developed countries. So, education is the key that must be fulfilled and carried out properly to produce human resources that develop the nation and its country. One of the most important forms of education is basic education; included in this category is primary school (Irawan et al., 2022).

Education stands as a primary necessity critical for a state's advancement. To uplift academic requirements, people need guidance in gaining knowledge to foster independence, vast know-how, and moral conduct. Training is a social tool for structured human resource improvement, imparting various advantages like understanding, capabilities, and values (Soraya, 2020). The initial step toward making improvements to schooling is elevating the competence of its educators. Many educators still need to gain digital literacy and familiarity with digital coaching techniques, a case shared by our partner, SD Yadika 1 Jakarta-Indonesia. The school is under the management of the Abdi Karya Foundation, established on February 14, 1976. The partner must upgrade digital literacy, specifically ChatGPT, to enrich the education process. They need to develop skills and competencies in managing learning with technology (Ausat et al., 2023).

Current years have visible changes throughout sectors, including academia, because of the strides in Artificial Intelligence (AI) technology (Diantama, 2023). AI mimics human intelligence and hassle-solving in non-dwelling entities. However, many must be aware of AI's pervasive function in mastering, regardless of its regular use (Ismawati & Ramadhanti, 2022). AI, also known as machine intelligence in computer science, is intelligence exhibited by computers as opposed to natural intelligence shown by humans and other species (Osaba et al., 2021).

Combining the two instances, our team and partner acknowledge the necessity of digital tools in education, whether in online or offline learning. Numerous AI-driven applications, like ChatGPT, can potentially enhance the learning method and processes. ChatGPT is a chatbot software program that uses user input to simulate human-like interactions, created by San Francisco-based OpenAI (Chinonso et al., 2023). ChatGPT, capable of responding to user input, have changed how humans interact with machines and opened new possibilities in teaching and learning (Fauzi et al., 2023).

Based on the condition stated above, the formulation of the problem for our activity is to socialize the AI technology, specifically in how ChatGPT's use can bolster schooling whilst ensuring its accountable and appropriate utilization.

## 2. METHOD

This Community service will occur for three months, from March until May 2023. The Steps to carry through this activity can be seen in Figure 1.
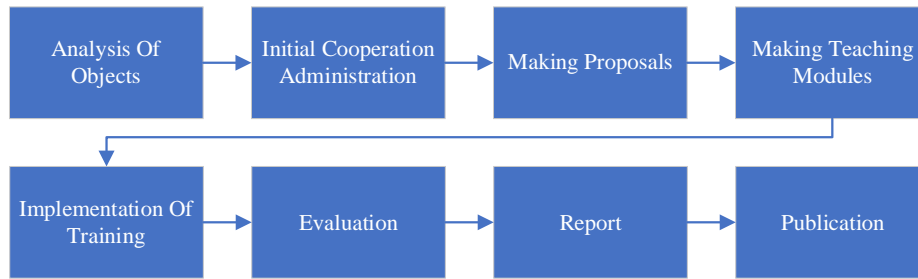
Figure 1. Stages Of Activities For The Community Service

The detailed process in Figure 1 is as follows:

a.  Analysis of Objects
    At this stage, the group conducts interviews, observations, and literature opinions. The interview method is used to accumulate subjective statistics inclusive of perspectives, attitudes, and needs from respondents (Hansen, 2020). The implementation team interviewed the headmaster of SD Yadika 1 and a representative teacher to discuss the school's wishes. Furthermore, the team also conducted direct observations at the partner within the Kalideres area, West Jakarta.
    Observation is the process of accumulating statistics through direct commentary. Observations tend to be stimulated through the observer, so the results are only partially impartial to the observer's situations. A literature review is also carried out to produce a more comprehensive analysis. A literature overview is important as it explains why the researcher chooses a particular subject matter or identity. The literature evaluation most effectively serves as the premise for the scope of the stated research. Usually, the literature overview includes sections that talk about theory, findings, and materials useful for the studies and form the premise of the research carried out (Ridwan et al., 2021).

b.  Initial Cooperation Administration
    In this step, the team coordinates and prepares the administrative papers regarding the technical and managerial aspects of the partnership between SD Yadika and Budi Luhur University.

c.  Create Proposal
    Proposals are one of the administrative conditions for community service programs adhering to the Budi Luhur University rules. Proposals also serve as a formal document that suggests idea clarification, solution and the solution presented.

d.  Create Teaching Modules
    Standardized teaching modules are used to deliver the content in a structured way that makes them easier to understand. A custom module is created based on the perceived competence of trainees from the analysis phase.

e.  Implementation of training
    The training is implemented through lectures, discussion, and practice. In the hands-on practice phase, the participant is guided to use ChatGPT to search and produce teaching materials.

f.  Evaluation
    To evaluate the effectiveness of this project, two types of evaluation are performed:
    First is the measurement of the perceived skill. The measurement uses pre-test and post-test, with ten multiple choice questions via Google form.
    The second is a questionnaire regarding the project execution. The goal is to achieve participant feedback for internal evaluation and future improvements.

g.  Report
    A report of the project and scientific article is an administrative stipulation that indicates the completion of the community service project.

h.  Publication
    The publication is intended to socialize the execution of the project, the result and future follow-ups to the public.

## 3.   RESULTS AND DISCUSSION

The execution of this community service project will be explained via the measurement of participant understanding level, project documentation and graphical questionnaire reports.

a.  Project Outcome

The participant of this project is 25 teachers from the community partner. With the profession of teachers, some concurrently take part in managerial positions. Each participant is required to practice hands-on under the guidance of the instructor. There are five major topics covered:
1)  The introduction and basics of AI and ChatGPT.
2)  How to make a PowerPoint outline using ChatGPT.
3)  How to compile learning/teaching materials using ChatGPT.
4)  How to use ChatGPT to generate relevant questions and assessment material using keywords.
5)  How to utilize ChatGPT to generate presentation content.
6)  The ethics and best practice to use AI.

During the project, no major problems occurred, and all the participants followed the intended program effectively.

b.  Measurement of Participant Response

The effectiveness of the training is measured using ten multiple-choice questions via Google. The questions are used in Pre-Test and Post-Test style, first before the training is conducted and second after the training is completed. The average score on the Pre-Test is 50 points, and the average score for the Post-Test is 61. The difference of 11 points shows a 22% increase in the participants' understanding. Figure 2 shows the graphic representation of these values.
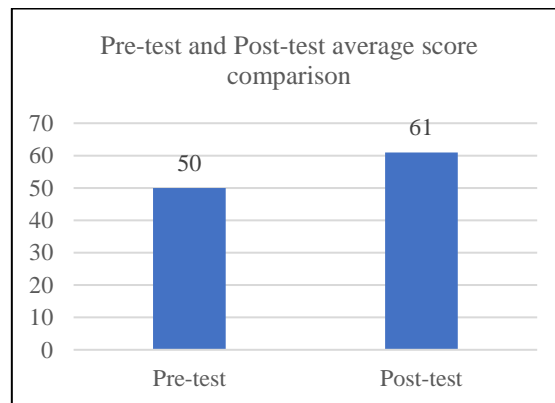


Figure 2. The results of the Pre-test and Post-test values are displayed in graphical form.

c.  Project Documentation
Figure 3 and 4 shows the participants and instructors of this community service project.



Figure 3.  Collective Picture of Participant And Instructor.

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Figure 4.  The Instructors Are Providing Training Materials To The Participants.

d.  Measurement of The Participant Feedback After The Training

At the end of the session, all participant is asked to fill out a questionnaire containing six questions that are designed to measure the effectiveness and performance of the project. Questionnaire questions use a Likert scale from 1-5. Commonly, 1 indicates negative sentiment, and 5 indicates positive sentiment. The details of the question can be seen in Table 1.

Table 1. Question List and Answer Options

| No | Question | Options | | | | |
|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** |
| 1 | Overall, the material and practice are appropriate for my job's demands. | Strongly disagree | Disagree | Neutral/ somewhat connected | Agree | Strongly Agree |
| 2 | Before this training, please classify your competence regarding the knowledge related to Artificial Intelligence. | I have not known about it and have not used it | I use it, but only some features are provided | I have used and tried the majority of a feature provided | I have used it regularly and fluently for the majority of features provided | - |
| 3 | Clarity of presentation by the instructor | Very poor | Poor | Average | Good | Very Good |
| 4 | Completeness of material modules provided | Very poor | Poor | Average | Good | Very Good |
| 5 | The level of the facility provided for this training. | Very poor | Poor | Average | Good | Very Good |
| 6 | Overall, the execution of this training | Very poor | Poor | Average | Good | Very Good |
| 7 | Please enter the topic that you wish to be discussed for the next training project. | Open-ended question | | | | |

Based on the answers given by the participants, the conclusion is as follows.

1.  Overall, the material and practice are appropriate for my job's demands.
    50% answered "agree", 40% answered "Strongly Agree", and 10% answered "somewhat connected". Figure 5 (left) shows a graphical illustration of this data.

2.  Before this training, please classify your competence regarding the knowledge related to Artificial Intelligence.
    40% claimed they had not known and had never used AI, 40% claimed they had used some feature provided, and 20% claimed they had used and tried most features. Figure 5 (right) shows a graphical illustration of this data.
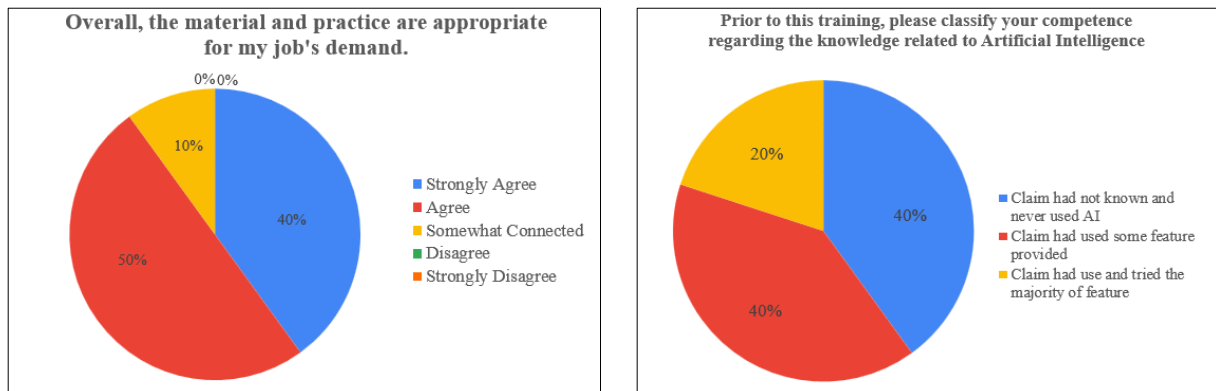
Figure 5. Graphical Illustration Of Answer For Questionnaire No 1 (Left|) And No 2 (Right)

3. Clarity of presentation by instructor.
   50% claim "Good", and 50% claim "Very Good".

4. Completeness of material modules provided.
   44.4% claim "Good", and 55.6% claim "Very Good".

5. The level of the facility provided for this training.
   30% claim "Average", 60% claim "Good", and 10% claim "Very Good".

6. Overall, the execution of this training.
   50% claim "Good", 50% claim "Very Good".

7. Please enter the topic that you wish to be discussed for the next training project.
   a. Big Data.
   b. Incorporation of AI for the student management system.
   c. Innovation of teaching activities.
   d. The training of CBT (Computer Based Test).
   e. Learning Management System.
   f. The character of Generation Z.

## 4. CONCLUSION

The community engagement project focused on utilizing Artificial Intelligence (AI) applications to enhance learning for primary school teachers at SD Yadika 1 Jakarta has yielded significant findings. Through the training methodology involving hands-on practice, pre-tests, and post-tests, a 22% increase in teacher knowledge has been recorded, highlighting the project's success.

Moreover, the survey results revealed varying levels of familiarity with AI among the participants, with the majority initially possessing limited knowledge. However, the most crucial takeaway from the project is the overwhelmingly positive response, with 100% of the participants expressing a satisfaction level of good or very good and recognizing the substantial benefits of the program. This underscores the project's effectiveness in providing added value to the teachers at SD Yadika 1 Jakarta and promoting a favourable view of AI integration in education.

In conclusion, this project not only achieved its goal of improving teachers' knowledge but also served as a motivating force for continued efforts in integrating AI into education. The findings emphasize the urgency of further developing AI skills and knowledge for educators, enabling them to harness the potential of this technology to enhance learning outcomes in the digital age. As such, this project has not only met its objectives of enhancing teacher knowledge but has also inspired a commitment to ongoing AI integration as a potent resource for educational development in the future.

# REFERENCES

Ausat, A. M. A., Massang, B., Efendi, M., Nofirman, N., & Riady, Y. (2023). Can Chat GPT Replace the Role of the Teacher in the Classroom: A Fundamental Analysis. Journal on Education, 5(4), 16100–16106.

Diantama, S. (2023). Pemanfaatan Artificial Intelegent (AI) Dalam Dunia Pendidikan. DEWANTECH Jurnal Teknologi Pendidikan, 1(1), 8–14. https://doi.org/10.61434/dewantech.v1i1.8

Chinonso, O. E., Theresa, A. M.-E., & Aduke, T. C. (2023). ChatGPT for Teaching, Learning and Research: Prospects and Challenges. Global Academic Journal of Humanities and Social Sciences, 5(02), 33–40. https://doi.org/10.36348/gajhss.2023.v05i02.001

Fauzi, F., Tuhuteru, L., Sampe, F., Ausat, A. M. A., & Hatta, H. R. (2023). Analysing the Role of ChatGPT in Improving Student Productivity in Higher Education. Journal on Education, 5(4), 14886–14891. https://doi.org/10.31004/joe.v5i4.2563

Hansen, S. (2020). Investigasi Teknik Wawancara dalam Penelitian Kualitatif Manajemen Konstruksi. Jurnal Teknik Sipil, 27(3), 283. https://doi.org/10.5614/jts.2020.27.3.10

Irawan, I., Chandra, J. C., & Irawan, H. (2022). Pelatihan Quizizz Guna Meningkatkan Kemampuan Pendidik Dalam Mengevaluasi Belajar Siswa Pada SD Yadika 1 Jakarta. KRESNA: Jurnal Riset Dan Pengabdian Masyarakat, 2(2), 314–322. https://doi.org/10.36080/jk.v2i2.40

Ismawati, N. A., & Ramadhanti, S. (2022). Penerapan Artifical Intelligence Dalam Mendukug Pembelajaran Di Era Digital. Prosiding Seminar Nasional Batch 1, 1(1), 158–166. https://prosiding.amalinsani.org/index.php/semnas

Ridwan, M., AM, S., Ulum, B., & Muhammad, F. (2021). Pentingnya Penerapan Literature Review pada Penelitian Ilmiah. Jurnal Masohi, 2(1), 42. https://doi.org/10.36339/jmas.v2i1.427

Soraya, Z. (2020). Penguatan Pendidikan Karakter untuk Membangun Peradaban Bangsa. Southeast Asian Journal of Islamic Education Management, 1(1), 74–81. https://doi.org/10.21154/sajiem.v1i1.10

Osaba, E., Villar, E., Lobo, J. L., Laña, I., & Engelbrecht, A. (2021). Artificial Intelligence: Latest Advances, New Paradigms and Novel Applications. IntechOpen. https://books.google.co.id/books?id=3GZCEAAAQBAJ