

**Research Article****OPTIMIZATION ARTICLE WRITING SKILLS BASED ON DIGITAL MEDIA LARGE LANGUAGE MODEL FOR TEACHERS OF MTS N 7 NGANJUK, EAST JAVA*****Hudi Santoso, Wahyu Budi Priatna, Abung Supama Wijaya, David Rizar Nugroho, Kania Dafina and Lely Ika Mawarti**

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Abstract

Training activities to the community through the program "Dosen Pulang Kampung" organized by the Directorate of Community Development AGROMARITIM IPB University. Popular article writing training based on digital media large language model aims to improve the knowledge and skills of teachers Mtsn 7 Nganjuk, East Java. This activity is in line with the goals of the 4th SDGS, namely quality education and the 17th SDGS, namely partnerships to achieve goals. In terms of school facilities and infrastructure such as internet accessibility, the school can utilize communication technology as a potential in developing the science and technology of digital media communication that is developing today for learning. Article writing training was conducted directly by a team of speakers from the Digital Communication and Media Study Program, Vocational School, IPB University, attended by participants who work as teachers and education personnel from MTSN 7 Nganjuk. The training activities carried out are Article Writing and publication training based on Digital Large Language Model (LLM) Media. The method used Participatory Rural Appraisal (PRA) with the approach of increasing participant participation and emphasizing the active involvement of participants in carrying out all activities. The result of this training activity is to improve the skills of teachers or educators in MTSN 7 Nganjuk related to writing popular articles through digital media based on the Large Language Model by implementing three systematic steps, namely the investigation stage, preparation stage, and implementation stage.

Keywords: Digital media, Education, Writing.

INTRODUCTION

Science and technology are advancing and developing, so the challenges faced by humanity are increasingly complex. This requires preparation and readiness in the use of methods to communicate science and technology easily and quickly to the public. Therefore, the role of communication is very important in the dissemination of technology and innovation in the framework of community development, especially in the educational environment. The process of change occurs with the introduction of an innovation, a new invention, in the form of ideas, actions, both in the form of technology, products and goods. The spread of technology and innovation is the core of social change in the context of Community Development. Adoption of innovation is not just about spreading ideas. But there is a novelty/ novelty or new discoveries. This means that knowledge and technological innovations are disseminated, at the same time they can be absorbed by society. This activity is known as diffusion of innovation. One of the latest innovations in the world of AI (Artificial Intelligence) is the Large Language Model (LLM). The LLM is a machine learning model created from a large collection of text and code data capable of producing text, translating languages, and writing a variety of creative content. Large Language Models (LLM) are language models trained on data sets with large amounts of data to process and understand natural language with extensive language understanding and knowledge (Yang *et al.*, 2023). The LLM technology demonstrates an outstanding ability to process information in a structured, creative, and natural way, almost mimicking the writing style of humans.

Notable examples of LLMs include Bard from Google and Chat GPT from Open AI. Chat GPT, as one example of a generative language developed by Open AI, uses large text and code datasets to communicate and generate human-like text in response to various prompts and questions. Although still in the development phase, Bard also shows potential to compete with Chat GPT. This text-based application helps in finding information, completing tasks, and answering questions, which is relevant to education that often relies on text as a source of learning. Chat GPT's ability to respond naturally facilitates the learning process in education. Open AI's GPT and GPT-4 Chat are very well-known models that can generate human-like answers to text prompts and allow text and images as input (Rizal, 2024). The capabilities of GPT Chat technology can be used in many fields, including in education (Fatin *et al.*, 2024). Chat GPT and Bard have great benefits in education, both for teachers and students. Teachers and education personnel can use Chat GPT to compile learning materials, create exam questions, and correct student writing or assignments. In addition, teachers can take advantage of GPT Chat to learn foreign languages, understand difficult concepts, and practice the skills of writing opinions, popular articles and scientific articles and publish in the mass media. The problems faced by teachers and educational personnel MTSN 7 Nganjuk include the not optimal use of artificial intelligent in writing popular articles, the limited knowledge and skills of teachers in utilizing digital technology for learning, as well as the lack of resources and training activities available to improve competence in the field of educational technology. This has an impact on the lack of variety of interactive and innovative methods. This affects the effectiveness of learning and the ability of students to understand the material in depth. The purpose of this writing is to analyze the optimization of writing

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skills of teachers and education personnel MTSN 7 Nganjuk through digital media training based on large language model.

METHODS

The method used in the study is Participatory Rural Appraisal (PRA). This PRA approach is a method of approach to increasing community participation and emphasizing community involvement in carrying out overall activities (Hidayana *et al.*, 2019) the implementation of PRA in this study, where participants were facilitated by external parties such as facilitators, or companions in order to analyze the skills and competencies of participants. So that the emphasis on active participation is needed to improve knowledge and skills, which will be the provision in formulating action plans in accordance with the conditions of the participants. In this study the researchers used the approach of participation and involvement of training participants teachers and education personnel MTSN 7 Nganjuk. The training implementation process is carried out in three stages, namely planning, implementation and evaluation. The planning phase of this training is carried out by conducting a survey in advance for the location of the training, the survey is carried out by coming directly to the place and coordinating with the school which is intended as a partner in participatory activities, namely to MTSN 7 Nganjuk. In addition, in this planning process also prepare a proposal that contains the background of the activity accompanied by complete information related to the training material carried out. The creation of material in the form of a power point is also included in the planning stage. The second stage is the implementation, in this stage of implementation, the training methods mentioned earlier are presentation methods, direct practice by participants and structured assignments. While conducting practical activities, the team of presenters and facilitators provided assistance to the trainees. The last stage is Evaluation, in this evaluation stage that is done is with the output produced by each participant, namely an article collected through google drive. The results of writing articles that have been collected and from the facilitator team make corrections so that it can be seen whether the participants have understood the article writing training.

Planning	Implementation	Evaluation
<ul style="list-style-type: none"> • Making a dedication proposal • Service location Survey • Creation of material in the form of power points 	<ul style="list-style-type: none"> • Presentation - Practice - Assignment • Ssistance during practical activities 	<ul style="list-style-type: none"> • Output is in the form of articles • Article rating

Picture 1. Community Training Implementation Mechanism

Data collection methods in this study as follows:

1) Observation

Observation is one of the data collection techniques by directly observing the situation under study (Hanafiah *et al.*, 2021). Observations in this study were conducted before and at the time of implementation. Observations were made around MTSN 7 Nganjuk, this aims to analyze the suitability and potential that exist there with the training carried out.

2) Interview

Interview is a data collection technique by digging up information obtained from key informants with the aim of obtaining the required data (Yudiantara *et al.*, 2021). Interviews in this study were conducted with several informants, namely the principal of MTsN 7 Nganjuk and several trainees who are teachers of MTsN 7 Nganjuk.

3) Documentation

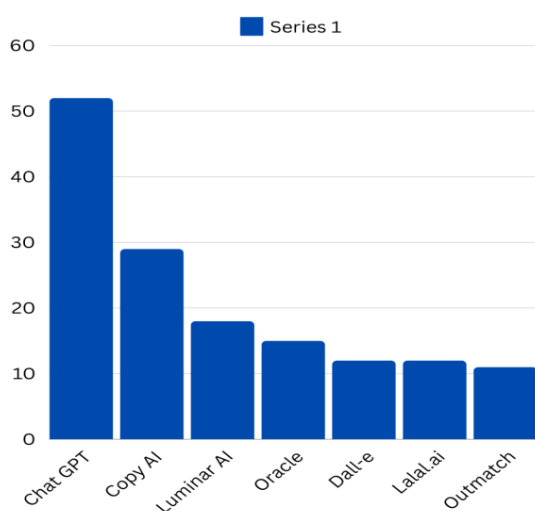
Documentation in this study was conducted as supporting data such as participant data and a series of training activities carried out from beginning to end.

The targets of this study through the program "Dosen Pulang Kampung" to MTSN 7 Nganjuk, as follows: improving skills so as to be able to compose creative writing; optimization of the utilization of artificial intelligence (AI) Chat GPT, which can be used to support the smoothness and success of writing popular articles; success in writing articles and publications in online media to support the credibility of writing.

RESULTS AND DISCUSSION

Optimization of article writing skills through training based on large language model

Large Language Model (LLM) is one of the models that have been widely used in today's era coupled with the support of rapidly growing digital media. Large Language Models (LLM) are language models trained on data sets with large amounts of data to process and understand natural language with extensive language understanding and knowledge (Yang *et al.*, 2023). Large Language models can produce text that is very similar to human text. One well-known example of an LLM is Chat GPT, developed by the technology company Open AI. Chat GPT can generate text that is very similar to human text and is used in various applications such as chatbots and automated writing (Ray, 2023). Artificial intelligence (AI) encompasses a variety of tasks such as speech recognition, computer vision, translation between languages, reasoning, knowledge representation, planning, learning, natural language processing, perception, and the ability to move and manipulate objects (Ram & Verma, 2023). The Large Language Model is a deep learning model that has a huge impact on large amounts of data. According to Rifky (2024) Deep Learning is a branch of machine learning that uses artificial neural networks with many layers to understand and analyze complex data. There are several types of Large Language models used especially for education, such as GPT Chat, Copy AI, Luminar AI, Orade, Dall-e, Lala AI, and Outmatch. Based on the results of the Katadata survey from Populix, half or 45% of Indonesia's population have used AI applications. According to the results of the survey, GPT Chat is an AI application that is mostly used by residents in Indonesia. The survey results noted that 52% use GPT Chat as a means of support to support and facilitate work. OpenAI's GPT and GPT-4 Chat are very well-known models that can generate human-like answers to text prompts and allow text and images as input (Rizal, 2024). GPT Chat can provide well-structured answers, the correct word order and have the right accuracy, besides that GPT Chat can also remember previous conversations, and GPT Chat can also produce journals, magazines or a scientific paper article with fast time (Fatin *et al.*, 2024).



Improving the skills of writing popular articles conducted by teachers or educators MTSN 7 Nganjuk with media-based Large Language Model, can help improve the quality and effectiveness of learning, by providing a more relevant material structure, creative and structured. The use of Large Language Model technology also allows teachers to speed up the writing process, gain new inspiration, and access wider sources of information, so that they can present more in-depth and interesting material to students. This can potentially improve the professional competence of teachers in the digital age and support in scientific publications. In line with Rosadi's opinion (2022) publications are a means of conveying information that is expected to make a positive contribution to the development of scientific insight for a person and society. Based on the problems or constraints that exist in teachers and educational personnel MTSN 7 Nganjuk, constraints in the use of technology, especially for Article Writing occur both theoretically and practically. It was identified, among others: (1) lack of optimal development of writing skills with digital technology; (2) has not been implemented coaching or article writing training based on digital technology intensively. The form of popular article writing training by IPB University Vocational School lecturers to MTSN 7 Nganjuk is in the form of sharing sessions and training with the themes: (1) Introduction of the Large Language Model; (2) The Importance of social media for education; (3) the effectiveness of prompt writing for learning; (4) writing popular articles strategy through the editorial desk. The results of in-depth interviews showed that the improvement of popular article writing skills supported by Digital media based on the Large Language Model had a significant positive impact on the ability of teachers to produce more quality and structured writing. Teachers who have attended this training have shown improvements in their understanding of writing structure, development of ideas, and use of more varied language.

The interview results also showed that teachers felt more motivated to continue to hone their writing skills with the support of Large Language Model-based technology. According to Abidin (2023) the application of new technologies has a positive impact on human life. The positive impact of implementing the implementation of digital media based on Large Language Model in the field of education, including: simplifying the task of teachers and students in teaching and learning activities; unlimited data storage; making the task of educators is not repeated, can be used at any time indefinitely; The work becomes faster and better.

The implementation of this activity is in the form of sharing sessions and training on the use of digital media based on the Large Language Model along with writing popular articles. The end result of this activity is expected to instill the value of character in creative writing using digital media based on Large Language Model, and improve understanding and knowledge of Creative Writing by optimizing the use of artificial intelligent (AI). According to Wahyudin, et al (2023) there are three stages systematically that must be implemented in an intensive training program, including the investigation stage; preparation stage; implementation stage.

- Investigation Stage:** This stage is the process of exploring the components of the problems faced by MTSN 7 Nganjuk in the use of Large Language Model. The process of problem identification, among others; (1) the lack of optimal development of writing skills by utilizing artificial intelligent; (2) the implementation of coaching or training on Article Writing based on digital technology; (3) not optimal professional development, especially in popular article writing. Related to Rifky's opinion (2024) one of the benchmarks in the success of education is the existence of a set of values, ideas or ideals and training patterns that are able to achieve educational goals.
- Preparatory Stage:** This stage prepares the Community Partnership program for this lecturer to run technically so that its usefulness can be felt by partners optimally. At this stage, encourage teachers and educators MTSN 7 Nganjuk benefit: (1) increased understanding related to creative writing that is useful for students and provide meaning in Community Life; (2) able to understand the role and position of artificial intelligence that can be used to help the success of good writing; (3) able to write popular articles and publish to online media.
- Implementation Stage:** This stage includes the implementation of this activity in the form of sharing sessions and training on the use of digital media based on the Large Language Model along with writing popular articles.

Table 1. Stages of MTs N 7 Nganjukat "Dosen Pulang Kampung" Program

Phase I Investigation Stage	Phase II Preparatory Stage	Phase III Implementation Stage
Exploring partner problems: <ul style="list-style-type: none"> Lack of optimal development of writing skills by utilizing artificial intelligent Not yet implemented coaching or training article writing based on digital technology Not optimal professional development, especially in writing popular articles. 	Things prepared: <ul style="list-style-type: none"> Planning materials and topics for sharing sessions and trainings. Plan a schedule of activities Community Partnership program site survei Coordinate with partners related to technical and implementation methods 	Submitted material: <ul style="list-style-type: none"> Introduction of Large Language Models The importance of social Media for Education Effectiveness of Writing Prompts for learning creativity Write Popular Articles

The utilization of digital technology based on Large Language Model or artificial intelligent (AI) can reduce the workload of educators in assessment and make it possible to provide more effective and detailed feedback (Widodo & Zuhdy, 2020).

Conclusion

Training activities conducted at MTSN 7 Nganjuk aims to improve the writing skills of teachers based on the Large Language Model. This activity is supported by the 4th SDGS, namely quality education and the 17th SDGS, namely partnerships to achieve goals. The training implementation process is carried out in 3 stages, namely planning, implementation and evaluation. The results obtained in this training is an improvement. This can be seen from the results of interviews, in which teachers who have attended this training show an increase in their understanding of the structure of writing, the development of ideas, and the use of language that is more varied. The interview results showed that teachers felt more motivated to continue honing their writing skills with the support of Large Language Model-based technology. So it can be concluded that the end result of the training activities in accordance with the expectations that can instill the value of character in creative writing using digital media-based Large Language Model, and improve understanding and knowledge of Creative Writing by optimizing the use of artificial intelligent (AI). This training activity is carried out in a short time of one day, so that the understanding gained by participants may still not be optimal, thus this training activity can be carried out more than one day with the frequency of training coupled with a smaller number of participants in order to ensure the development of each participant.

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