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INTEGRATING ARTIFICIAL INTELLIGENCE (AI) TECHNOLOGY TO IMPROVE TOEFL SCORES FOR STUDENTS OF SMAN 19 BANDUNG

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Abstract

This community service program aimed to provide training on the integration of Artificial Intelligence (AI) technology to improve TOEFL scores among twelfth-grade students at SMAN 19 Bandung. The method employed in this program involved training and mentoring, which consisted of two main stages: the implementation stage (preparation and training) and the evaluation stage. During the preparation stage, the team coordinated with the school, developed training materials, and set up AI-based learning tools. In the implementation stage, students were trained to use various AI applications and platforms, such as interactive chatbots, automated grammar correction tools, and AI-driven TOEFL simulations. Through intensive mentoring, participants were encouraged to practice their reading, listening, speaking, and writing skills with the assistance of AI technologies. The evaluation results indicated that students gained significant knowledge of TOEFL learning strategies as well as the ability to effectively utilize AI to enhance their English proficiency. Furthermore, the program fostered greater motivation and self-confidence among students in preparing for the actual TOEFL test. Therefore, this community service initiative is expected to make a meaningful contribution to improving the quality of English language education at the high school level.

Keywords: Integration, Artificial Intelligent Technology, TOEFL

INTRODUCTION

The use of Artificial Intelligence (AI) in education has become a significant innovation, particularly in English language teaching (Saeedakhtar et al., 2021). Listening, reading, and writing skills are the most challenging aspects of language learning. However, they are crucial, especially in the context of TOEFL (Test of English as a Foreign Language) preparation. The TOEFL is a widely used exam to assess the English language proficiency of non-native speakers. It is an essential requirement for those wishing to continue their studies or work in an English-speaking environment (Syamsurrijal et al., 2021).

At SMA 19 Bandung, students' listening, reading, and writing skills still need to be improved to achieve adequate TOEFL scores (Wahyuni, N., Idhar, I., & Bulan, 2022).

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Therefore, this training program is designed to utilize AI technology to improve students' listening, reading, and writing skills. AI offers adaptive solutions that can be tailored to individual student needs, providing real-time feedback and allowing for repetition of material as needed, all of which are highly beneficial in improving listening, reading, and writing competencies (Yaniawati et al., 2023, & Ratnasari et al., 2019).

AI technology can present listening, reading, and writing materials at varying levels of difficulty, helping students adapt to various situations they may encounter on the TOEFL exam (Ozmen et al., 2018; Iqbal & Zurriyati, 2020). Furthermore, AI can provide detailed analysis and feedback on student performance. The use of AI in learning also aligns with the increasingly rapid development of educational technology, where technology integration is essential to improve the quality of education (Lu, 2019). Listening, reading, and writing skills are not only important for the TOEFL exam, but also in various professional contexts (Wahyuni, N., Idhar, I., & Bulan, 2022). With the growth of globalization, good English language skills, including listening, reading, and writing, are essential to compete in the global job market (Kukulska-Hulme & Viberg, 2018). Therefore, improving students' listening, reading, and writing skills through technological innovations such as AI is a strategic step to prepare them to face future challenges.

This training program has several main objectives:

1. To improve the listening, reading, and writing skills of SMA 19 Bandung students, particularly in the context of the TOEFL.
   By utilizing AI technology, students can practice listening, reading, and writing with materials tailored to their needs and abilities, thus better preparing for the TOEFL exam.
2. To integrate AI technology for more adaptive and interactive listening, reading, and writing learning: AI allows learning materials to be presented dynamically and interactively, thereby engaging students and making the learning process more effective.

Through this training, an innovative and compelling learning ecosystem will be created, which not only improves students' listening, reading, and writing skills but also enhances their competence in utilizing AI technology in learning (Hawa et al., 2024). This program is expected to serve as a model for other schools in their efforts to improve the quality of English language education in Indonesia (Rokhayani et al., 2023).

IMPLEMENTATION METHOD

In this section, the method of implementing the AI training program to improve listening, reading, and writing skills for students at SMA 19 Bandung will be explained in detail. The method used involves several stages designed to achieve the objectives set in this community service activity (Fetters, M.D., Curry, L.A., & Creswell, 2013). This training utilizes a collaborative learning method that combines the use of AI technology with a collaborative learning approach (Wahyuni, N., Idhar, I., & Bulan, 2022). This method was chosen because it has proven effective in increasing student active participation and engagement in the learning process (Johnson & Johnson, 2017). Collaborative learning enables dynamic interactions

between students and teachers, which can increase learning effectiveness through discussion and team collaboration (Gokhale, 1995).

To provide a clearer picture, the following is a flow of activities that will be carried out in this training:

1.Initial Preparation:

- Establishing training objectives and gathering relevant AI learning materials.
- Selecting the AI platform or application to be used in the training.

Training Implementation:

2. Collaborative learning sessions using AI technology to improve listening skills.
   - Forming working groups for collaborative discussions and activities.
3. Evaluation and Discussion:
   - Evaluating teachers' progress in using AI for listening skills.
   - Reflective discussions to evaluate the effectiveness of AI in the learning process.

By following this process, it is hoped that the AI-supported collaborative learning method can significantly improve skills in using AI in listening, reading, and writing at SMA 19 Bandung.

RESULTS AND DISCUSSION

To implement an effective listening, reading, and writing skills training program utilizing AI technology, the following steps were carefully designed. First, a site survey and target identification were conducted to identify the specific needs of SMA 19 students. This step included interviews and an initial survey to understand the obstacles faced and their expectations for the training program (Mukminan, 2013). Based on the survey results, learning materials were designed to be relevant to the students' ability levels and to be integrated with AI technology (Chen et al., 2019). Next, materials were developed by creating AI-based listening, reading, and writing materials that could adapt to various difficulty levels.

These materials were designed to cover a wide range of listening, reading, and writing skills by utilizing AI technology for personalization, real-time feedback, and repetition (Supangat et al., 2021). Interactive and adaptive content, such as video, audio, and quizzes, was also developed to increase student engagement, utilizing in-depth AI analysis to tailor materials based on student needs (Putra et al., 2020). Material implementation was carried out by actively involving students in class through collaborative learning techniques to increase their interaction and engagement. Formative evaluation was conducted throughout the learning process to provide direct feedback and adapt the materials to meet student needs (Agustina & Saputra, 2017). Summative evaluation was conducted at the end of the program to measure the achievement of overall training objectives through pre- and post-tests to quantitatively assess improvements in students' listening, reading, and writing skills (Ary et al., 2018).

This training activity involves several systematically designed stages to achieve the stated objectives. The activity begins with a site survey and target establishment to identify specific student needs related to listening, reading, and writing skills, as well as the use of AI technology. The survey was conducted through interviews and questionnaires to collect relevant data on the challenges and expectations of the training participants. Based on the

survey results, learning materials were tailored to meet the identified needs. During the material development phase, the training team developed AI-based listening, reading, and writing content covering various difficulty levels and conversational contexts. The material was designed to adapt to individual student abilities, provide real-time feedback, and allow for repetition as needed. The interactive content developed included videos, audio, and quizzes aimed at increasing student engagement in the learning process. The training materials were implemented in class with active student involvement. Evaluations were conducted periodically through formative and summative methods to assess the program's effectiveness and its impact on improving students' listening, reading, and writing skills.

The use of AI in listening, reading, and writing learning allows for the adjustment of materials to students' ability levels, provides real-time feedback, and creates more contextual learning environments. AI allows learning materials to be tailored to individual student abilities, allowing each student to learn at their own pace and capacity. Using AI increases the effectiveness of learning and student comprehension of listening, reading, and writing materials. Furthermore, AI provides real-time feedback, which is very helpful in the learning process. Students can immediately identify their mistakes and receive suggestions for improvement, further enhancing their learning process. Learning materials created with AI are more interactive and adaptive, which makes students more engaged and motivated to learn.

However, the implementation of this program also faces several challenges. One obstacle is the limited technological infrastructure in schools.

Not all schools have devices that support the optimal use of AI. Furthermore, students experienced technical difficulties using AI software at the beginning of the training. This AI requires additional time for adjustment and adaptation. Adopting new technology takes time and effort. Students need to adapt to the use of AI in learning. Furthermore, managing and maintaining the technological infrastructure requires additional costs and resources.

Despite these challenges, this program has great potential for further development. It has the potential to be expanded to other schools in Indonesia. Further development of listening, reading, and writing learning materials using AI is possible.

During the preparation phase, the training team ensured that all necessary materials were adequately prepared, including AI software, LCD projectors, and adequate classroom space for the training. The training took place on May 16, 2025, at SMA 19 Bandung, beginning with participant roll call at 10:00 a.m. The training team leader opened the event, followed by a material delivery session.

The training materials were delivered through presentations, group discussions, and practical demonstrations. Direct mentoring by the training team was crucial to ensuring that participants understood and effectively practiced the use of AI technology. Training evaluation was conducted through interviews and direct observation throughout the event. Participants demonstrated high enthusiasm, asking many questions and providing positive feedback on the material presented.

Picture 1. Explanation about TOEFL skill strategies

The program was documented through various media to demonstrate the implementation process and results. Photos showing classroom training, student interactions, and the use of AI devices provide visual evidence of the program's effectiveness.

Picture 2. Explanation about AI

The evaluation results graph shows a comparison of pre- and post-training test scores to illustrate improvements in students' listening, reading, and writing skills. The participation data table displays student participation and attendance levels throughout the training program, providing a comprehensive overview of the program's success.

No.		Pre-Test	Pro-Test	Improvement
1	Dwinavio Alfisyahrin Shaumi	310	417	+107
2	Amelya Liesanty Subagyo	373	517	+144
3	Syafira Hasya Putri Rezkian	393	570	+177
4	Ajeng Yayu Widiya	393	500	+107
5	Bram Adya Pratama	377	500	+123
6	Alyka Salsasyifa	420	580	+160
7	Lilis Kartika	437	573	+136
8	Najmah Kaamiliaa	427	503	+76
9	Hilya Aini	330	603	+273
10	Lorencius Rajagukguk	397	550	+153

The results of this activity demonstrated a significant improvement in students' understanding of listening, reading, and writing. The partners involved in this training, namely students from SMA 19 Bandung, played a crucial role in the success of this program. They were

actively involved from the preparation to the implementation and evaluation of the activity. The active participation and enthusiasm of the participants demonstrated that the program was well-received and provided significant benefits for improving student competency. The expected outcomes of this training include improved student understanding of the concepts and importance of using AI in listening, reading, and writing. By acquiring new skills supported by this training, SMA 19 students are expected to improve the quality of their listening, reading, and writing learning and prepare for the TOEFL exam.

CONCLUSION

AI training to improve listening, reading, and writing skills for students at SMA 19 Bandung has shown very positive results. Students who participated in this training were able to integrate AI technology into their learning methods, resulting in more interactive and adaptive learning and providing fast and effective feedback to students. This improvement in student competency had a direct impact on their listening, reading, and writing skills, as evidenced by improved pre- and post-training test scores. Students also demonstrated higher learning motivation because the material presented was more engaging and contextual.

However, the implementation of this program was not without challenges. Limited technological infrastructure at the school and technical barriers to the use of AI software were obstacles that needed to be overcome. Nevertheless, this program successfully demonstrated that the use of AI in learning can significantly improve the effectiveness of listening, reading, and writing. The main advantage of this program is the AI's ability to adapt learning materials to students' ability levels, provide real-time feedback, and create a more engaging and contextual learning experience. Furthermore, the collaborative learning method implemented in this training helps improve students' skills.

For further development, this program has great potential to be expanded to other schools in Indonesia. Additionally, collaborating with higher education institutions and technology organizations to develop more comprehensive and integrated training programs is a strategic step that can be taken. Thus, this AI training can become an effective and innovative teaching model, capable of improving the quality of English language education in Indonesia as a whole.

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