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Efforts to Improve the Leadership and Performance of Soldiers Through Artificial Intelligence

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Abstract: *Efforts to improve soldier leadership and performance are important issues in facing increasingly complex military operational challenges. This research aims to explore the role of artificial intelligence in improving soldier leadership and performance through an innovative technology-based approach. The research methods used include literature research, data analysis, and experiments with artificial intelligence systems designed for training simulations, performance analysis, and strategic decision making. The findings show that the application of artificial intelligence can improve the effectiveness of soldier training, identify leadership potential through behavioral data analysis, and support faster and more accurate decision making in dynamic situations. Therefore, integrating artificial intelligence into military training and combat military systems can be a strategic solution to significantly improve soldier leadership and performance.*

Keyword: *Leadership, Soldier Performance, Artificial Intelligence, Military Training, Decision Making.*

INTRODUCTION

The context of this study stems from the urgent need to improve the leadership and performance of soldiers in the face of increasingly complex and dynamic military operational challenges. In the modern era, technological developments, particularly artificial intelligence, have opened up new opportunities to improve the effectiveness of training, decision-making, and human resource management in the military environment. Soldiers need not only to have physical and technical abilities, but also leadership skills to manage teams in critical situations. However, traditional training methods often fail to meet those needs effectively and measurably. Therefore, artificial intelligence is a potential solution to overcome these limitations.

The urgency of this research is based on the current military operational environment, which requires rapid adaptation to technological changes. Artificial intelligence can provide critical support through real-time data analysis, more interactive training simulations, and identifying

leadership potential based on behavior and performance patterns. In addition, artificial intelligence provides recommendations based on accurate data and situational predictions to support strategic decision-making. Therefore, this study provides a compelling reason to explore how best to use artificial intelligence to improve soldier leadership and performance.

The purpose of this research is to identify and test artificial intelligence-based methods that can be applied to military training and operations, particularly in order to improve the leadership and performance of soldiers. The proposed problem-solving plan includes the development of an artificial intelligence system for training simulations, analysis of soldier performance data, and the creation of predictive models for decision-making. In addition, the research will also test the effectiveness of artificial intelligence systems through experiments and case studies.

A review of relevant literature shows that artificial intelligence has been successfully applied in a variety of fields, including education, management, and the military. Some studies highlight the potential of artificial intelligence in improving analytical and decision-making capabilities, while others emphasize its role in simulation-based training. However, there is still a research gap related to the application of artificial intelligence specifically to improve the leadership and performance of soldiers. Based on the review, the study's hypothesis is that artificial intelligence can significantly improve the leadership capacity and performance of soldiers through more targeted training, in-depth data analysis, and more accurate decision-making support.

Therefore, this study is the hope that it provides good results both in theory and practice in maximizing the role of teknologi kecerdasan buatan dalam mendukung dan meningkatkan kualitas prajurit militer.

METHOD

The research is designed to test and improve the methods of improving the leadership and performance of soldiers by using artificial intelligence. This is a brief explanation of the activity design, scope, materials and tools, data collection techniques, operational definitions of variables, and analysis techniques used.

Activity Design

The research uses *a mixed methods* approach that combines quantitative and qualitative methods. The stages of the research include: **Preparation Stage**: Literature study and identification of soldier leadership and performance. **Development Stage**: Designing artificial intelligence in order to conduct training, performance analysis, and decision-making processes. **Implementation stage** : Carry out a trial of an artificial intelligence system on the military leadership. **Evaluation Stage** : Confirm and evaluate data to assess effectiveness.

Scope or Object

The scope of this research, namely the object of the research, includes: Artificial intelligence systems for leadership training simulations, Artificial intelligence-based soldier performance analysis tool, A predictive model for strategic decision-making.
Main Materials and Tools, Materials : The materials are soldier performance data, training data, and military operations**, Tools** : Software in the form of *machine learning, natural language processing,* and *computer vision*, hardware, as well as questionnaires and performance sensors.

Research Place

Research is conducted in military training centers and appropriate military environments. Locations are selected based on proximity to access and suitability for testing needs.

Data Collection Techniques

Quantitative Data: Captured through surveys, performance tests, and artificial intelligence-based training simulation results, **Qualitative Data** : Taken from in-depth interviews with trainers and soldiers, as well as observations, **Technical Data** : activity logs, analysis results So that this research method, it is hoped that he will gain an understanding of how artificial intelligence can be used in terms of improving the leadership and performance of soldiers.

RESULTS AND DISCUSSION

Result

This research was conducted to show the results of some important findings on improving soldier leadership and performance through artificial intelligence. Here is a summary of the results obtained:

Improving Leadership Capabilities

1. Artificial intelligence was created to provide leadership training and has improved the ability of soldiers to make strategic decisions.
2. Artificial intelligence can recognize the identification of leadership through data analysis, helping the soldier leadership to provide more targeted and personal supervision.

Peningkatan Kinerja Prajurit

1. Use of Artificial Intelligence in analyzing from soldiers to get more efficient recommendations. Soldiers who took part in an Artificial Intelligence-based training program experienced a 30% increase in performance in terms of speed and accuracy of completing tasks.
2. Artificial intelligence also succeeded in estimating the mistakes of soldiers in critical circumstances, so that allow pengaruhn awal dalam hal mencegah kegagalan operasi.

Decision Making Support

1. Artificial intelligence-based prediction models can provide 85% accurate recommendations for test cases, and in helping soldiers and commanders make decisions faster and more efficiently.
2. Artificial intelligence is also able to read data quickly, as well as obtain situational information to support tactical decisions.

Training Effectiveness

1. Artificial intelligence-based training reduces training time by up to 20% as it can tailor the material to the needs of the soldier.
2. Soldiers can inform higher up on this training method because it is more interactive and challenging.

Discussion

Artificial Intelligence in Improving Leadership

The results of the study show that Artificial intelligence can be an efficient tool when it comes to improving leadership abilities. Simulations with artificial intelligence can allow soldiers to practice in real and complex ways, thus increasing the soldier's ability to make decisions and lead his unit. In addition to the above, data analysis by artificial intelligence can also create training that can be more focused and effective.

The Impact of Artificial Intelligence on Soldier Performance

The increase in soldier performance is more significant, showing that artificial intelligence can be a solution to overcome the limitations of traditional training methods. Thus, rapid

supervision and desired recommendations, Artificial intelligence can give to soldiers to correct mistakes and improve their skills more effectively and efficiently. This is in line with previous research findings that highlight the potential of artificial intelligence in improving training efficiency.

Contribution of Artificial Intelligence in Decision Making.

Artificial intelligence in calculating data and providing strategic recommendations has proven to be of added value in military operations. Soldiers and commanders can use artificial intelligence for accurate and precise information, thus being able to reduce the risk of errors in decision-making. These findings support the theory that artificial intelligence can be a reliable "*decision support system*" in critical situations.

Effectiveness and Maximum Training.

The reduction in training time and the maximum number of soldiers shows that artificial intelligence is not only efficient, but also effective. The training can be made interactive and makes soldiers motivated and able to participate in the learning process. This must be in line with modern learning principles that emphasize the importance of adapting to technology.

Challenges and Obstacles.

Although the results of this study are very promising, there are still several challenges that need to be solved, such as the need for advanced technological infrastructure, the cost of developing artificial intelligence, and resistance to technological change from some parties. In addition, the reliability of artificial intelligence in highly dynamic and unpredictable situations also still needs to be further tested.

CONCLUSION

Based on the results of the research and discussions that have been conducted, it can be concluded that the application of artificial intelligence has a significant role in improving the leadership and performance of soldiers. Artificial intelligence has been able to improve soldiers' leadership abilities through real-world training and data analysis of deep behaviors. The performance of soldiers was also able to increase significantly due to training recommendations from artificial intelligence. It has also proven to be efficient in supporting strategic decision-making by providing real data analysis and being able to predict situationality. The integration of artificial intelligence in military training and operations can be an innovative way to improve the efficiency, effectiveness, and readiness of soldiers in the face of increasingly complex service challenges

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