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## Technology-Based Career Development in the Digital Talent Program by Kominfo: The Role of AI in Enhancing Digital Career Readiness in Indonesia

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**Abstrack:** In the era of rapid digital transformation, the need for highly skilled digital talents is increasing, especially in industries that utilize artificial intelligence. This article explores the role of AI technology in technology-based career development applied in the Digital Talent Scholarship program by the Ministry of Communication and Informatics in Indonesia. The DTS program aims to equip the community with digital skills, from basic to advanced levels, in order to improve digital career readiness that is relevant to the needs of the modern industry. This research discusses how the integration of AI in the training and career planning process can provide personal and effective guidance for participants to achieve their professional goals.

Utilizing a qualitative-descriptive approach, this study examines the structure and effectiveness of AI-integrated training in improving digital competencies, while also exploring the ethical implications of leveraging participant data for career recommendations. The research findings highlight the pivotal role of AI in personalizing career trajectories, accelerating learning, and providing more accurate access to information about digital job opportunities. However, the analysis also identifies challenges related to data privacy and algorithmic bias that can potentially influence career recommendations. These insights offer new perspectives on both the potential and limitations of applying AI in technology-driven career development within the Indonesian context, and provide recommendations to strengthen sustainable, AI-based digital training infrastructure. The article contributes to the scholarly discourse on technology-driven human resource management and serves as a foundation for policymakers in designing inclusive and adaptive training programs that cater to the

evolving needs of the digital job market.

Keywords: Artificial Intelligence, Career Development, Digital Talent, Digital Career Readiness, Human Resource Management

## INTRODUCTION

Career is a vital aspect that shapes an individual's life, affecting their financial prosperity, personal fulfillment, and societal contributions. Amid the persistent trends of digitization and automation, the demand for skilled digital talents continues to escalate. As one of the countries with the greatest potential for digital economic growth in Southeast Asia, Indonesia acknowledges the urgency of developing human resources that are well-equipped to meet the evolving requirements of the digital job market. ([Edrawati, 2023](#))

Career development, as defined by Simamora, encompasses the progression of positions an individual holds throughout their professional career. In this context, the focus of career development has shifted beyond mere advancement within organizational hierarchies, and instead emphasizes the enhancement of competencies and expertise that are aligned with the evolving demands of the industry. ([Afrita, 2023](#)) ([Mulianingsih et al., 2020](#))

The advent of rapid digital transformation has significantly reshaped the landscape of the modern workforce, giving rise to a pressing need for skilled digital talents. To address this evolving demand, the Indonesian Ministry of Communication and Informatics has launched the Digital Talent Scholarship program, a strategic initiative aimed at equipping the public with the necessary competencies to navigate the technology-centric era of Industry 4.0. ([Gaol, 2021](#)) Consistent with this overarching trend, the Indonesian Ministry of Communication and Informatics has developed the DTS program as a concerted effort to enhance the capacity and capabilities of the nation's digital human resources. ([Natalia & Netra, 2020](#)) ([Wijaya, 2021](#))

The Digital Talent Scholarship program, instituted by the Indonesian Ministry of Communication and Informatics, endeavors to bolster the capacity of human resources in the digital domain. ([Purwaamijaya & Prasetyo, 2022](#)) The program encompasses a comprehensive suite of training offerings, ranging from foundational to advanced skill development, tailored to align with the evolving demands of the job market. By seamlessly integrating artificial intelligence technology into the training process, the program provides participants with personalized and adaptive guidance. This facilitates the cultivation of competencies that are closely aligned with the participants' interests and career aspirations.

This article examines the role of AI in technology-driven career development, particularly within the context of the Digital Talent Scholarship program administered by the Indonesian Ministry of Communication and Informatics. The study investigates the experiences of program participants, the efficacy of AI-integrated training, and the ethical considerations surrounding its implementation. The research findings contribute to the advancement of technology-driven human resource management policies and practices in Indonesia, as well as expand the scholarly discourse on the application of AI in career planning.

Existing career planning tools frequently lack the capacity for personalization. Standardized assessment and recommendation approaches often fail to adequately address the unique needs of individual participants. The incorporation of artificial

intelligence technology into the Digital Talent Kominfo training and career development program has the potential to offer more adaptive and personalized solutions. However, while AI holds promise in enhancing the effectiveness of training and career planning, there is a need to investigate the specific implications of AI implementation within the context of human resource management and career development in the Indonesian setting. This research endeavors to further explore the benefits and challenges of integrating AI to support inclusive and sustainable technology-driven career development.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Artificial intelligence has emerged as a pivotal component in the advancement of digital technology across various industrial sectors ([mulianingsih et al., 2020](#)) ([Taufik et al., 2023](#)). In the context of the employment landscape, AI can be harnessed to enhance the efficiency and efficacy of the career planning process. This includes leveraging AI for talent identification, job opportunity recommendations, and more appropriate talent deployment.

One relevant application of AI is in human resource management systems, which can analyze personal data, employment history, and applicant preferences to offer more personalized career recommendations. Additionally, AI technology can support the training process by providing

adaptive learning materials tailored to individual learning styles, and by predicting suitable job fields based on the participants' skill sets.

Existing literature has demonstrated that AI can enhance the efficiency and efficacy of the education system. This is achieved through accelerating the learning process, offering personalized recommendations, and leveraging predictive analytics to forecast student behavior and improve data management ([Afrita, 2023](#)). Furthermore, studies have uncovered the potential of AI in bolstering talent management in Indonesia, including in the areas of recruitment, career development, and optimal human resource allocation ([Purwaamijaya & Prasetyo, 2022](#)).

Within the context of the Digital Talent Scholarship program of Kominfo, AI technology can be leveraged to construct a more adaptive and personalized career planning system for participants. AI-based systems possess the capability to analyze the profiles, interests, and skills of participants, subsequently providing recommendations for suitable career trajectories, as well as monitoring the development of their competencies throughout the training program.

The Digital Talent Scholarship program, an initiative of the Ministry of Communication and Informatics of Indonesia, was launched in 2018 with the objective of developing digital talents who possess the competencies and relevance required by the job market in the Industry 4.0 era. The DTS Kominfo program offers comprehensive digital skills training, ranging from foundational to advanced levels, in alignment with the needs of the industry. Through this program, participants are provided with tailored guidance and training that cater to their individual interests, abilities, and career potential within the digital sector.

The Digital Talent Scholarship program offered by the Ministry of Communication and Informatics encompasses a multifaceted curriculum not solely focused on artificial intelligence, but also encompassing training across various other digital technology domains, such as big data, cloud computing, cybersecurity, and more. The DTS program is designed to equip participants with the competencies requisite for the

Industry 4.0 era. The following provides further details on the nexus between DTS Kominfo and the development of AI skills:

DTS and AI:

- The DTS Kominfo program provides specialized instruction in the field of artificial intelligence, encompassing topics such as machine learning, deep learning, computer vision, and natural language processing. This training equips participants with both the theoretical and practical understanding of AI, as well as the ability to apply it in diverse contexts.
- Additionally, the DTS Kominfo program integrates AI components into training across various other digital technology domains. For instance, in the context of big data training, participants learn to utilize machine learning techniques for data analysis.
- The Digital Talent Scholarship Kominfo program also employs artificial intelligence technology to personalize the learning experience of participants. AI-based systems analyze the profiles, interests, and competencies of participants, and subsequently offer tailored training recommendations and feedback to meet individual needs.

Benefits of DTS in developing AI skills:

- Enhancing competencies in AI: The Digital Talent Scholarship Kominfo program offers comprehensive and structured training that can assist participants in developing and refining their skills in the field of artificial intelligence.
- Preparing participants for careers in AI: Through the extensive training provided by the Digital Talent Scholarship Kominfo program, participants acquire the necessary skills to enter the workforce in the field of artificial intelligence, which is an increasingly in-demand sector in the current employment landscape.
- Supporting Indonesia's digital transformation: By producing digitally skilled individuals who

are proficient in the field of artificial intelligence, the Digital Talent Scholarship program of the Ministry of Communication and Informatics contributes to the efforts of digital transformation in Indonesia.

The Digital Talent Scholarship Kominfo program endeavors to cultivate digital talents who possess the competencies and relevance demanded by the job market. Incorporating AI into the training curriculum can bolster this objective by facilitating a more personalized, quantifiable, and adaptive learning experience tailored to the preferences and performance of the participants.

## METHODS

This study adopted a qualitative research approach utilizing a literature review methodology. The literature review involved an analysis of various information sources, encompassing scientific journals, reports, articles, and policy documents related to the application of artificial intelligence technology in career development and the Digital Talent Scholarship program. This comprehensive analysis aimed to gain a thorough understanding of the potential and challenges associated with the implementation of AI in the context of the DTS Kominfo program.

The data analysis was conducted employing qualitative content analysis techniques, whereby the researchers identified, categorized, and interpreted the themes



that emerged from the collected data.

## RESULT AND DISCUSSION

The analysis reveals several key roles that AI technology can play in supporting technology-based career development through the Digital Talent Scholarship Kominfo program:

1. **Personalized Learning Experiences:** AI-based systems can analyze the profiles, interests, and skills of DTS program participants to customize the learning experience and provide personalized training recommendations that cater to individual needs ([Taufik et al., 2023](#)).
2. **Career Forecasting and Guidance:** AI algorithms can predict future career potential and required competencies, as well as offer guidance and recommendations on suitable career paths for DTS participants ([Afrita, 2023](#)).
3. **Tailored Training:** By leveraging AI, the DTS Kominfo program can deliver training content that is customized to the learning styles, preferences, and individual needs of participants, thereby enhancing the effectiveness and efficiency of the learning process ([Afrita, 2023](#)).
4. **Participant Performance Monitoring:** AI can assist in tracking the progress of participants during training, identifying areas that require special attention, and providing more personalized feedback and support ([Purwaamijaya & Prasetyo, 2022](#)).

This study examines data from the 2023 Digital Talent Scholarship participants to investigate the pivotal roles of artificial intelligence technology in fostering technology-driven career development through the Digital Talent Scholarship program administered by the Ministry of Communication and Informatics. The program is designed to bolster the digital capabilities of Indonesia's workforce, concentrating on technology-centric competencies like artificial intelligence, big data, and cloud computing. The findings from the program's impact assessment demonstrate:

### 1. Employment Status Changes

The evaluation using the Logistic Regression model shows that the DTS training is effective in improving the employment status of the participants:

- Before Training: 50.03% of participants were already employed, while 49.97% were unemployed.
- After Training: 25% of participants transitioned from unemployed to employed status.
- Other Findings: Participants aged 16-25 years old are more likely to get new jobs compared to other age groups.

Status Before	Status After	Change (%)
Unemployed: 49,97%	Employed 25%	+25%
Employed: 50,03%	Started Business: 6%	+6%

### 2. Income Changes

The positive impact on the participants' income was analyzed using the Mincer Wage Equation model:

- Income Increase: 64.2% of participants experienced a salary increase with an average increment of IDR 457,000 - IDR 549,000.

- Certification Effect: Participants with GloTech certification experienced an increase of up to 32.3% or around IDR 1,611,000.

Income Before	Income After	Average Increase(Rp)	Increase(%)
Rp5.181.947 (Jawa)	Rp5.192.521 (Jawa)	Rp457.000 Rp549.000	+64,2%
Rp3.845.774 (Non-Jawa)	Rp3.662.569 (Non-Jawa)	Rp1.611.000 (GloTech)	+32,3%

### 3. DTS Program Effectiveness

The DTS program has demonstrated effectiveness in improving digital skills that are relevant to the demands of Industry 4.0. The increase in the employment status of the participants reflects the program's success in creating job-ready talents. Participants with D4/S1 educational backgrounds dominate, indicating a correlation between formal education and the success of digital training.

### 4. Relevance of Certifications and AI Technology

Certifications such as GloTech are an important factor in enhancing the competitiveness and income of the participants. The AI technology applied in the training provides a personalized learning experience, helping participants find the most suitable career path.

### 5. Geographic Differences and Accessibility

Alumni from outside Java recorded a more significant increase in income compared to alumni from Java. This indicates that the DTS program has successfully reached areas with limited access, contributing to the equitable distribution of employment opportunities across Indonesia.

## CONCLUSION

The Digital Talent Scholarship program plays a crucial role in augmenting the digital career preparedness of participants through technology-driven training and certification initiatives. By fortifying cross-sectoral collaborations and broadening access to these training opportunities, this program can serve as a pivotal catalyst in supporting Indonesia's national digital transformation agenda. The integration of Artificial Intelligence within the learning process and career guidance frameworks has demonstrated its capacity to enhance the efficiency and effectiveness of the program, culminating in the cultivation of more competitive digital talents poised for the job market. Nonetheless, the implementation of AI necessitates careful regulation to ensure transparency, accountability, and the robust protection of participant data.

This study also identified several key challenges in implementing AI within the Kominfo DTS program, including:

- Ensuring the availability of high-quality data necessary for the effective training of AI models
- Addressing infrastructure and technology accessibility constraints that hinder the equitable deployment of AI-enabled initiatives across various regions
- The imperative to enhance the competencies of human resources involved

in the development and utilization of AI technologies

The study proposes the following recommendations to optimize the role of AI in the Kominfo DTS program:

- Developing a comprehensive and secure data infrastructure to enable the effective training of robust AI models.
- Fostering cross-stakeholder collaboration to broaden access to AI-empowered digital training initiatives across all regions of Indonesia.
- Investing adequately in infrastructure and upskilling human resources to ensure sustainable AI adoption.

Establishing clear ethical guidelines and governance frameworks to ensure the fair, transparent, and responsible utilization of AI to safeguard the rights of program participants. By implementing these recommendations, the Kominfo DTS program can further leverage AI technology to enhance the digital career preparedness of Indonesia's workforce and comprehensively support the country's digital economic transformation agenda.

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