



# **Integrative Systematic Review on the Impact of AI-Based Training Programs on Motivation and Performance of Non-Academic Educational Staff**

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**Abstract**—This study aims to systematically review how artificial intelligence (AI)-based training affects the motivation and performance of non-academic educational staff in educational institutions. The review employed a Systematic Literature Review (SLR) approach, analyzing 20 selected articles from SCOPUS, Web of Science, and SINTA databases. Findings reveal that AI-based training contributes to improved work efficiency, employee engagement, and adaptive skills. However, its impact on work motivation is highly dependent on digital literacy, training design, and managerial support. The study also highlights a lack of integrative models that link AI training, motivation, and performance in a cohesive framework. The findings offer theoretical contributions to the development of digital HRM in education and practical insights for designing inclusive and adaptive AI-based training. This study's limitations include the scarcity of longitudinal data, dominance of research from developed countries, and limited contextual insights from Southeast Asia. Future research is encouraged to apply empirical and longitudinal approaches to strengthen causal understanding and contextual applicability.

**Keyword:** AI Training; Work Motivation; Non-Academic Staff; Digital Literacy; Higher Education

## **1. INTRODUCTION**

In this fast-changing digital age, using artificial intelligence (AI) to manage human resources has become a significant way to make organisations more effective, even in higher education. One area of research is how to apply AI in digital training programs to help educational administration personnel (tendik) become more skilled, motivated, and effective. Using AI for training, such adaptive learning platforms, training chatbots, and machine learning-based recommendation systems, has been found to make employees learn more quickly and make the best use of their time at work (Rogers, 2023).

Motivation to work is a key aspect that affects how employees act, how dedicated they are, and how productive they are. Herzberg's theory talks about two types of motivators: intrinsic and extrinsic. Both of these are important in schools. In the case of educational administrative staff, role clarity, recognition, and access to relevant and new training can often affect motivation (Forson et al., 2021).

Several studies have shown that AI-based training can make people more motivated at work by giving them more customised and flexible ways to learn (Arslan et al., 2025). Even though it promises to be very efficient, AI-based training is hard to put into practice and has a lot of problems. Some studies show that staff members are resistant because they don't know how to use technology well, they don't see any immediate benefits, and they are worried about technology taking over their jobs (Forson et al., 2021). Also, not all schools have the digital infrastructure to support AI training, especially in developing nations. This leads to differences in skills across people and institutions. (Page et al., 2021) observed that AI training made the administrative personnel perform more efficiently, but it didn't greatly boost their long-term motivation because the organisation didn't support it. In the same way, (Kantsou et al., 2024) found that well-designed digital training makes administrative workers feel more like they belong and happy with their work. (Rahiman & Kodikal, 2024) said that AI training often leaves out emotional and motivational parts in favour of focussing just on technical skills. There is a big gap in how AI-based training, motivation, and performance may be combined into a single study model, according to the papers that were looked at. Most research separates AI training from motivation research without looking at how they affect each other.

Another problem is that there isn't any long-term data on how AI training affects the performance of educational administration staff over time (Rahiman & Kodikal, 2024). There aren't many studies that focus on non-academic administrative staff, even though they play a key role in the success of educational institutions. There is more and more research on AI-based training for human resource development, although most of it still focusses on academic staff like professors and lecturers. This shows that there is a lack of study, especially when it comes to using smart technologies to help educational administration staff (tendik) improve their skills. (Tong, 2021), for instance, looked at how AI affected the work attitudes and performance of teachers, but they didn't talk about administrative or support positions. In the same way, (Tong, 2021) focused on AI training for pre-service teachers instead of nonacademic personnel. In reality, tendik is very important for the success of digital transformation in institutions.

So, we need to learn more about this group of people, which includes figuring out what training they require and coming up with AI-based training plans. One big difference from previous studies is that there isn't a conceptual model



that brings together the three main variables: AI-based training, work motivation, and employee performance. A lot of research just looks at the link between two factors, such as AI and motivation (Achackzai et al., 2024) or training and performance (Achackzai et al., 2024), without looking at how all three are connected. Also, there aren't many theoretical approaches that connect technology aspects with theories of organisational psychology or motivation. For example, Herzberg's approach, also known as self-determination theory, is not often used to describe how AI-based training influences people's emotions. This limit makes it harder to explain why some AI-based training programs don't lead to long-term performance improvements. Also, there isn't enough long-term data to see how AI training affects motivation and performance. Most of the studies that are out there are cross-sectional, which means they don't look at effects over time. For example, (Firlianda, 2019) observed that teachers were more motivated following training, but they didn't check to see if the effect lasted. Also, not many research use a cultural or geographic background. Most of them are from developed countries that have good digital infrastructure.

A study by (Firlianda, 2019) in a SINTA publication shows that the main problems with digital training are a lack of technology and digital literacy. So, research in underdeveloped nations like Indonesia is quite important for coming up with ideas that work better in those places.

This study's goal is to look at how AI-based training influences the motivation and performance of educational administrative staff (tendik) in a systematic way, using scientific literature that has been published in respectable journals. It will create a unified conceptual framework and look at important trends and results from earlier research. This study will find gaps in knowledge and suggest new areas for research by using a bibliometric and systematic literature review (SLR) method.

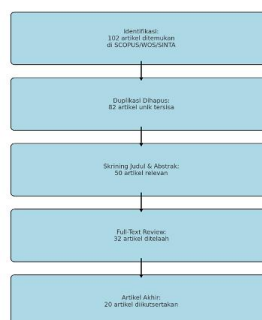
Theoretically, this study adds to the body of knowledge by bringing together research from the fields of human resource management, educational technology, and organisational behaviour. In real life, the results can help policymakers in higher education create AI-based digital training programs that not only increase skills but also boost motivation and productivity. This study also gives us a starting point for coming up with strategies for digital transformation of human resources in the education sector.

## 2. RESEARCH METHODOLOGY

### 2.1 Stages of Research

This study employs a Systematic Literature Review (SLR) to gather together what we already know about how AI-based training might help schools' non-academic personnel do their jobs better and keep them motivated at work. We picked the SLR method because it helps us make sense of and organise the research that has been published in the last few years (Pu et al., 2021). The study follows the PRISMA 2020 standards (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which are the international standard for reviewing literature (Rogers, 2023). We want to make sure that the study is good and open. The major purpose of this study is to look at academic research that focusses on how AI-based training programs might make non-academic education workers more motivated and better at their jobs. More and more schools and other businesses are embracing smart technologies to teach their staff, which makes this strategy very useful (Reitgruber, 2023).

In this scenario, the SLR combines old material and looks for gaps in the research that haven't been completed yet. Because of this, this technique is very helpful for the study in both its theoretical and practical purposes. The first step in this methodical strategy was to look for useful scholarly articles in three well-known databases: SCOPUS, Web of Science, and SINTA. We searched for "AI-based training," "employee motivation," "employee performance," and "non-academic educational staff." We only looked at articles from 2019 to 2024 so that we could be sure they were up to date with the latest developments in AI technology. This stage made 112 first articles. After removing duplicates and completing a first screening based on titles and abstracts, there were only 51 papers left. The next stage was to check if the articles were eligible. This meant carefully reviewing all of the articles to make sure they were relevant to the research topic. The last analysis only looked at studies that clearly talked about how AI training affects either the motivation or performance of employees. This is why 20 key articles were chosen for a closer examination. Figure 1 shows you how to screen articles one step at a time.



**Figure 1.** Prisma Diagrams (Vertical Block Model)



## 2.2 Validity and Reproducibility

A PRISMA Flow Diagram was used to show the steps of literature screening in a way that made the process clear and accountable. This figure shows how many articles were left out at each stage and gives a quantitative overview of the selection process. Two researchers also made the selection on their own to reduce bias and make the selections about who to include more reliable. The search technique, keyword approach, and exclusion criteria were all carefully written down and put in the methodology section so that future researchers could easily follow the same steps. Many sectors, such as education and human resource management, have widely used the PRISMA method (Pavlaou et al., 2025). So, using this strategy is quite important for making sure that a systematic literature-based study is of high quality and trustworthy.

## 2.3 Method of Analysis

We used two main methods to look at the chosen articles: thematic qualitative analysis and bibliometric analysis. We used thematic analysis to group the main findings according to the study's goals, methods, variables used, and the constraints of earlier research. At the same time, bibliometric analysis was utilised to look at the structure of the literature in a more quantitative way, looking at citations, creating co-authorship networks, and finding theme trends. This method led to a list of publications sorted by topic, country of origin of the authors, and journals where they were published. (Pavlaou et al., 2025) and Burcă-Voicu and Dabija (2023) have also used this method successfully in similar research to show how employee motivation and performance are linked in technology-driven settings. We set up rules for what articles could be included in the analysis and what ones could not. The articles were to be written in English or Indonesian, published in peer-reviewed journals between 2019 and 2024, and focus on AI training, motivating employees, and the performance of non-academic educational staff.

On the other hand, editorials, opinion pieces, white papers, and studies that only looked at technology and didn't include people were not allowed. We also added national journal articles that were indexed in SINTA to give local context and add to the range of points of view. For example, (Reitgruber, 2023) study shows how hard it is to use technology-based training in Indonesian schools. These criteria made the selection process more organised and focused on high-quality literature. There will be four main themes in the final results of this research method: how AI training affects the motivation of educational staff; how training affects the performance of administrative work; how factors like digital literacy and leadership style can act as mediators or moderators; and the creation of an integrative conceptual framework. We look at each theme based on how strong the evidence is and how clear the ideas are. This is important not only for talking about trends but also for getting a better theoretical understanding. Narratively, all of the findings will be talked about, and visual bibliometric data will back them up. This methodology part gives us a strong base for meeting the study goals and making both practical and scholarly suggestions.

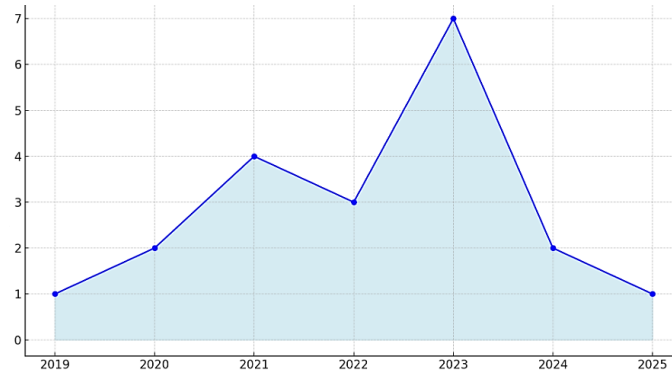
## 3. RESULT AND DISCUSSION

Over the past five years, this systematic investigation shows that there has been a big rise in academic articles about AI-based training, work motivation, and the effectiveness of educational support staff. Based on the PRISMA 2020 procedure, only 20 of the 102 papers that were found met the strict selection requirements. Most of these publications were written between 2020 and 2023, which shows that the topic has become more important as the education sector has gone through a faster digital transformation (Tayyaba et al., 2025). The studies come from many different nations, such as Indonesia, the UK, China, Ghana, and the UAE. This shows how AI-based training is used in many different settings in education. Most of the publications that were chosen were published in well-known journals including the Journal of Management Development, Cogent Education, and the Future Business Journal. All of these journals are indexed in SCOPUS and Web of Science (WOS). There were several methods used, such as quantitative, qualitative, and conceptual model-based investigations. In general, the results show that all of these efforts have the same goal: to make training more effective, increase employee motivation, and improve the performance of non-academic personnel through AI-driven technology.

### 2.1 Thematic Analysis

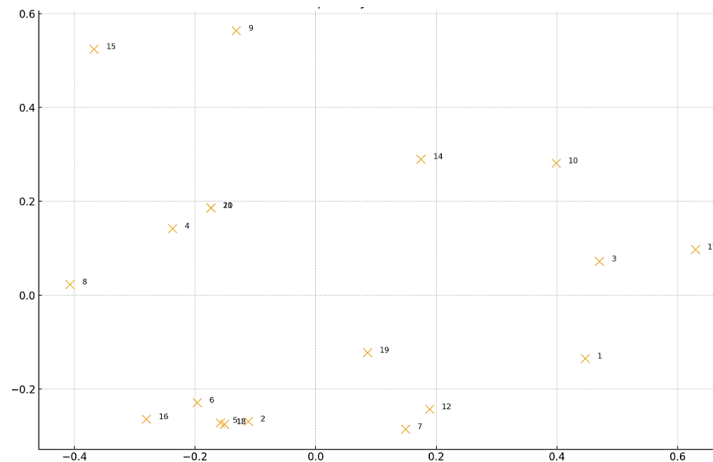
There were three main themes that came up in all 20 of the articles that were looked at. The first theme is on how AI-based training affects how motivated educational staff are to do their jobs. Most research show that AI can boost motivation by using personalised and interactive ways of learning (Tayyaba et al., 2025). The second subject looks at how AI-based training affects people's performance, especially when it comes to administrative and operational work in schools. For example, Yimam's (2022) study showed that customised technology training made people more productive at work. The third theme looks at what makes AI-based training possible and what makes it harder to do, such as digital literacy, technological readiness, and managerial support. Low levels of digital literacy have been found to be a major reason why people don't use technology, especially in lower-tier schools. Also, resistance to change is often a big reason why digital training initiatives don't work.





**Figure 3.** Publication Trend

The trend in publications in Figure 3 illustrates that interest in the topic of AI in relation to motivation, training, and employee performance has grown a lot recently. Publications slowly started to rise in 2019 and reached their highest point in 2023. This trend demonstrates that more and more academics are interested in how AI might be utilised in education and managing people, especially now that machine learning and automation technologies have gotten better. The surge in 2023, which will continue into 2024 and 2025, also illustrates that artificial intelligence isn't just a fleeting fad; it's become a significant and long-lasting subject of research in numerous fields.



**Figure 4.** Thematic Map

Figure 4 shows a visual representation of the thematic map, which demonstrates how the themes from 20 chosen research titles are spread out based on how related the keywords in those titles are. The dots represent individual research studies, and the distance between them shows how similar the themes or words used are. The closer the dots are, the more similar the topics or words used are. This study shows that there are a number of minor groups, which suggests that there are sub-themes in organisational settings, such as AI-based training, incentive to work, and working with machines. It shows that although all the research is about AI and human resource development in general, they each have their own specific goals and methods.

### 2.3 Synthesis and Discussion of Findings

The thematic and bibliometric analyses show that AI-based training has a lot of potential to improve the motivation and performance of educational staff. Several publications show that personalised AI-driven training regularly increases employee engagement and a feeling of competence, which are two important parts of self-determination theory (Harefa & Winadi, 2025). But the result of this kind of training isn't always the same, because things like leadership style, managerial support, and a culture of learning that includes everyone can have an effect. Maity (2019) says that making sure the training design matches the needs of the job is one of the most important things that makes a program work. Also, training that is based on technology is usually more effective when it is followed by monitoring of performance over the medium term instead of only looking at results right after training. However, institutions with inadequate digital infrastructure, particularly in developing countries, often struggle to fully reap the benefits of AI-based training (Reitgruber, 2023). A more holistic and contextualised approach is needed when creating and implementing digital training programmes for teachers.

### 2.4 Implications of the Findings

The results of this study have substantial effects on theory, practice, and policy. In theory, this study adds to the conversation in educational administration and human resource development by providing a paradigm that links AI-



based training, work motivation, and the performance of non-academic educational staff. Researchers can use this framework as a foundation for future studies that explore the interrelationships between these variables. In practice, schools and universities are encouraged to create AI-based training systems that are flexible and responsive, not only to teach skills but also to boost employees' intrinsic motivation. The organisation should strongly support these kinds of training models with ongoing evaluation systems and plans to improve digital literacy. From a policy point of view, educational management bodies and local governments should create tiered digital training programs for administrative workers, with learning modules that are tailored to each person's starting level of skill. The use of smart technology for training must align with infrastructure investment and equitable access to basic digital education. This is important to stop institutions from having different levels of digital access, which could cause productivity gaps.

## 2.5 Issues with the Analysis

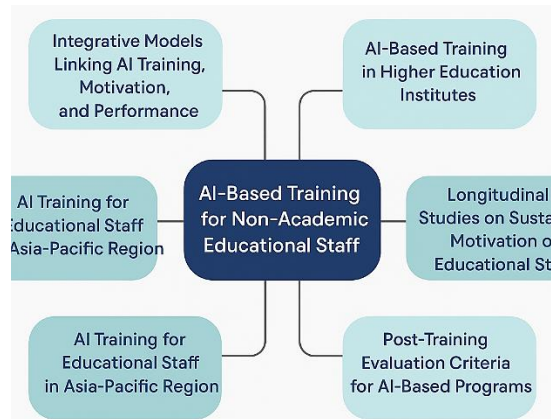
There are several flaws with this study, just like there are with other literature evaluations. First, there aren't many articles that talk directly about workers who help with education. Instead, most studies look at academic staff or faculty members. Second, most of the articles we looked at are cross-sectional, which means they don't give us data across time that could reveal how training affects people over time. Third, much of the study comes from rich countries; therefore, the situations and effects they studied may not be the same for schools in poor countries like Indonesia. Fourth, it's been harder to acquire all the contextual data because certain full-text articles are hard to find (Pada et al., 2023). Fifth, the bibliometric method only looks at keyword networks and a little amount of citation analysis, which might not fully indicate how theoretical ideas are related. These constraints do not make the results less valid; instead, they show how important it is to perform more focused and empirical study. In the future, researchers should look at mediating and moderating variables in a way that is easier to assess. Such an approach is especially important for AI-based training for educational support workers.

## 2.6 Possible for Research Novelty

After looking at past studies, we have uncovered a few interesting new directions for future research, such as:

1. **Creating a model that connects AI training, motivation, and performance**  
Most of the studies that have been done so far are simply partial, looking at the association between two factors in isolation. In the future, researchers could come up with a conceptual model that shows how AI-based training is directly related to better work motivation and performance among non-academic education staff. In the real world of schools, we need this kind of model to look at the long-term consequences and changing interconnections between various things. Using a mixed-methods approach will make the proposed model more valid, which will add to both theory and practice.
2. **Longitudinal Study of the Long-Term Effects of AI Training on School Staff**  
Most of the research that is currently being done is cross-sectional, which doesn't show the long-term effects of training interventions. Longitudinal designs should be used in future studies to see if benefits in motivation and performance after AI training interventions remain over time. This would help answer important issues concerning whether the effects of training are only short-term or last over time. The results will be very useful for policymakers and HR managers in schools and colleges. They will also make it possible for schools and colleges to work together over time.
3. **Research in the Asia-Pacific Region (Including Indonesia) in Context**  
Most of the studies that have been done so far have been in industrialised countries with good digital infrastructure. There isn't a lot of writing on the Asia-Pacific region, especially at schools in developing countries like Indonesia. To understand the social and cultural factors, digital readiness, and structural problems that come up while trying to use AI-based teaching in local schools, we need to do contextual study. This will give regional policy institutions useful information on the background and add to the global literature, which is still mostly focused on the Global North.
4. **Creating Evaluation Criteria for AI Training Programs for Teachers and Other School Staff**  
Another possible contribution is the creation of a detailed evaluation system for training programs that use AI. So far, a lot of studies only look at outcomes based on what the participants thought or their final training results. Future studies might make both quantitative and qualitative tools that look at things like motivation, flexibility, job satisfaction, and how well administrative tasks are done. These indicators could be used as tools for internal or external audits of schools and could also help researchers and education managers work together.
5. **Research Focus on Colleges and Universities as Places to Train AI**  
Most of the time, AI training has been aimed at teachers or other academic staff. However, administrative staff at colleges and universities are quite important for providing educational services. Future study should look more at how AI might make academic administration, financial management, and student services run more smoothly. One area of research could be making performance management systems that use AI and work with academic information systems. The results could make higher education governance much more efficient and adaptable. A case study approach that looks at more than one place would give better and more useful data.

Figure 5 illustrates the contemporary literature mapping of the growing research novelty.



**Figure 5.** Literature mapping of the growing research novelty

## 4. CONCLUSION

This study looked at 20 scientific articles about AI-based training and how it affects the motivation and performance of non-academic educational professionals in a systematic way. The results show that AI-based training improves staff efficiency, engagement, and flexibility, especially when the training is tailored to each person, relevant to their job, and backed by management. But the effect on job motivation can change based on things like how ready a person is for technology, how well they understand it, and how much support they get from their institution's leaders. The review also shows that most of the research that are now out there still just look at the relationship between two factors, and they haven't yet come up with a way to connect AI training, motivation, and job performance in a way that makes sense. These results suggest that we need to create a new conceptual model that includes all three areas: technology, psychology, and organisation. From a practical point of view, the results show how important it is to create digital training programs for non-academic personnel that are flexible, tiered, and relevant to their work, along with regular reviews and extra training in digital literacy. When it comes to policy, schools and the government need to make sure that there is enough infrastructure, budget support, and rules in place to help change the way teachers are trained. This study does have some problems, though. For example, there aren't many longitudinal studies, most of the studies are from wealthy countries, and there aren't many publications that focus only on non-academic staff. To make the findings more relevant and accurate, future study should use empirical and context-specific methods, especially in Southeast Asia.

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