



Artificial Intelligence and Teacher Wellbeing in Nigeria: A Thematic Analysis through the Lens of the Job Demands–Resources Model

Nijerya’da Yapay Zekâ ve Öğretmen İyi Oluşu: İş Talepleri–Kaynaklar Modeli Perspektifinden Tematik Bir Analiz

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Abstract

Artificial intelligence (AI) is increasingly shaping educational practices in Nigeria, with potential implications for teachers’ emotional, cognitive, and professional wellbeing. Drawing on the Job Demands–Resources (JD–R) model, this review synthesises evidence from fourteen Nigeria-focused studies published between 2020 and 2025 to examine how AI is discussed as both a source of support and a source of strain for teachers. Using thematic analysis, the review identifies patterns across empirical and conceptual studies addressing AI-enabled changes in workload, skills development, ethical concerns, and institutional conditions. The synthesis suggests that AI is frequently associated with perceived benefits such as reduced administrative burden, enhanced instructional feedback, and opportunities for professional innovation. At the same time, the literature highlights challenges linked to uneven AI literacy, limited training provision, infrastructural constraints, and uncertainties surrounding data privacy, accountability, and professional autonomy. These factors are commonly interpreted as increasing job demands, particularly in under-resourced educational settings. Across the reviewed studies, teacher wellbeing appears to be shaped less by the presence of AI itself than by the balance between AI-related demands and the availability of supportive resources, including training, leadership support, and ethical governance frameworks. However, the reviewed evidence varies in methodological approach, scope, and reported outcomes, which limits the extent to which firm conclusions can be drawn regarding causal relationships. Overall, this review indicates that AI has the potential to both support and challenge teacher wellbeing in Nigeria, while underscoring the importance of context-sensitive implementation and the need for more robust, longitudinal research.

Keywords: Artificial Intelligence, Teacher Wellbeing, Job Demands–Resources Model, Thematic Analysis Nigeria

Öz

Nijerya’da yapay zekâya (YZ) ilişkin eğitim uygulamaları giderek daha fazla şekillenmekte olup, bu durum öğretmenlerin duygusal, bilişsel ve mesleki iyi oluşları açısından önemli sonuçlar doğurma potansiyeline sahiptir. İş Talepleri–Kaynaklar (JD–R) modeli temel alınarak hazırlanan bu derleme, 2020–2025 yılları arasında yayımlanmış ve Nijerya odaklı on dört çalışmadan elde edilen bulguları sentezleyerek, YZ’nin öğretmenler açısından hem destek hem de stres kaynağı olarak nasıl ele alındığını incelemektedir. Tematik analiz yöntemi kullanılarak, iş yükü, beceri gelişimi, etik kaygılar ve kurumsal koşullardaki YZ destekli değişimleri ele alan ampirik ve kavramsal çalışmalar arasındaki örüntüler belirlenmiştir. Sentez bulguları, YZ’nin sıklıkla idari yükün azalması, öğretimsel geri bildirim güçlenmesi ve mesleki yenilik fırsatlarının artması gibi algılanan yararlarla ilişkilendirildiğini göstermektedir. Bununla birlikte literatür, eşitsiz YZ okuryazarlığı, sınırlı eğitim olanakları, altyapı yetersizlikleri ve veri gizliliği, hesap verebilirlik ile mesleki özerklik konularındaki belirsizliklere bağlı zorlukları da vurgulamaktadır. Bu faktörler özellikle kaynakların kısıtlı olduğu eğitim ortamlarında iş taleplerini artıran unsurlar olarak yorumlanmaktadır. İncelenen çalışmalar genelinde öğretmen iyi oluşunun, YZ’nin varlığından ziyade YZ’ye ilişkin talepler ile eğitim, liderlik desteği ve etik yönetişim çerçeveleri gibi destekleyici kaynakların dengesi tarafından şekillendiği görülmektedir. Ancak incelenen kanıtların yöntemsel yaklaşım, kapsam ve raporlanan sonuçlar bakımından farklılık göstermesi, nedensel ilişkiler konusunda kesin sonuçlara ulaşılmasını sınırlamaktadır. Genel olarak bu derleme, YZ’nin Nijerya’da öğretmen iyi oluşunu hem destekleyebilecek hem de zorlayabilecek bir potansiyele sahip olduğunu ortaya koymakta; bağlama duyarlı uygulamaların önemini ve daha sağlam, boylamsal araştırmalara duyulan ihtiyacı vurgulamaktadır.

Anahtar Kelimeler: Yapay Zekâ, Öğretmen İyi Oluşu, İş Talepleri–Kaynaklar Modeli, Tematik Analiz, Nijerya



Introduction

Teacher wellbeing has become an increasingly prominent topic in educational research, driven by growing concerns about teacher stress and burnout and their significant impact on both teachers and students. Teacher wellbeing can be defined as a teacher's cognitive, emotional, physical, and social responses to the conditions of their work and profession (Viac & Fraser, 2020). High levels of teacher wellbeing are linked to greater job satisfaction, increased resilience, and better student outcomes (Duckworth et al., 2009; Beltman et al., 2011). Conversely, poor teacher well-being is associated with adverse outcomes, including high levels of stress, burnout, and absenteeism, which, in turn, contribute to teacher attrition and reduced educational quality (Burić et al., 2019). In fact, research indicates that nearly half of teachers report high daily work stress, with many facing chronic emotional exhaustion, feelings of professional inadequacy, and diminished motivation (Agyapong et al., 2022). This reality not only undermines the effectiveness of teaching but also disrupts the broader functioning of schools, leading to a cycle of low morale and high turnover rates (Viac & Fraser, 2020). The rising pressure on teachers to manage their increasing responsibilities amidst a dynamic educational landscape has made it more urgent to address and improve teacher wellbeing.

At the same time, Artificial Intelligence (AI) is increasingly becoming a cornerstone of educational reform, promising to revolutionize teaching practices and classroom management. AI can be broadly defined as the simulation of human intelligence in machines that are programmed to think and perform tasks typically requiring human cognition, such as problem-solving, decision-making, and learning (Avurakoghene & Oredein, 2023). In the educational context, AI encompasses a range of tools designed to support teachers by automating administrative tasks, personalizing learning for students, and providing data-driven insights to enhance instructional practices (Avurakoghene & Oredein, 2023). While AI holds significant promise for alleviating teacher workload and improving learning experiences, it also presents challenges that may affect teacher well-being. For instance, the rapid integration of AI into classrooms could place additional demands on teachers to adapt to new technologies, potentially leading to stress and feelings of inadequacy if proper support and training are not provided. Moreover, the reliance on AI may alter the traditional teacher-student dynamic, raising concerns about the dehumanization of education and the impact on teachers' professional autonomy and job satisfaction (Selwyn, 2019). Therefore, as AI continues to permeate schools, it is crucial to examine how these technological innovations intersect with teacher wellbeing, ensuring that their implementation fosters a supportive and sustainable environment for teachers.

Despite the growing global literature on AI in education, there remains a significant gap in understanding how its integration affects teachers' emotional, cognitive, and professional well-being within the Nigerian context. Much of the existing scholarship originates from developed countries, leaving a limited synthesis of evidence on how AI adoption influences teachers' lived experiences in resource-constrained educational systems such as Nigeria's. To bridge this gap, this paper offers a critical scoping review of how AI integration influences teacher wellbeing in Nigerian schools through both beneficial and detrimental mechanisms, guided by the JD–R model.

Research Aim

This paper aims to explore how AI affects teacher well-being in Nigerian educational contexts, examining both its supportive and adverse impacts through the lens of the JD–R model.

Research Questions

The following questions guide this review:

1. What dimensions of teacher wellbeing are most frequently discussed in Nigeria-focused literature on AI in education?
2. How is AI being conceptualised and applied in Nigerian educational settings, and what teacher roles are implicated?
3. In what ways does AI function as a job demand and/or job resource influencing teacher wellbeing in Nigeria?
4. What organisational, ethical, and capacity-building conditions are identified as shaping whether AI supports or undermines teacher wellbeing in Nigeria?

Understanding Teacher Wellbeing

Teacher wellbeing has become a central concern in educational research, as the increasing demands placed on teachers continue to influence their personal and professional lives. Teacher wellbeing is a multifaceted concept encompassing the cognitive, emotional, physical, and social dimensions of a teacher's experience in the school environment (Viac & Fraser, 2020). It refers not only to the teacher's job satisfaction and mental health but also to their overall quality of life, professional fulfillment, and ability to cope with the challenges of the profession. As the teaching profession faces growing challenges, including workload pressures, student behavior issues, and societal expectations, understanding and enhancing teacher wellbeing is critical to maintaining a motivated and effective workforce.

Researchers have approached teacher wellbeing from various perspectives, leading to a broad and sometimes fragmented understanding of the term. For instance, teacher wellbeing is influenced by both individual characteristics such as personal coping mechanisms, and organizational factors, such as school climate and leadership (Dreer, 2022). This broader understanding of wellbeing has been corroborated by studies highlighting the interplay between internal and external factors affecting teachers' mental and emotional health (Burić et al., 2019).

The connection between teacher well-being and professional outcomes is well established. High teacher well-being is associated with greater job satisfaction, resilience, and improved performance (Beltman et al., 2011). Conversely, low well-being has been linked to negative consequences, including burnout, stress, absenteeism, and higher turnover rates (Sutton & Wheatley, 2003). A study found that nearly half of teachers report high daily work-related stress, which significantly affects their emotional and physical health and their overall effectiveness in the classroom (Agyapong et al., 2023). Chronic stress and burnout not only affect teachers personally but also have far-reaching consequences for student outcomes, school climate, and institutional performance (Burić et al., 2019).

The literature has also explored how teachers' well-being is influenced by their work environment. According to a study, social support from colleagues and school leaders is a crucial factor in maintaining teacher wellbeing (Turner et al., 2022) Teachers who feel supported by their peers and administrators are more likely to experience higher job satisfaction and lower stress. In contrast, a lack of support, unrealistic

expectations, and poor school climate can exacerbate feelings of burnout and inadequacy. Moreover, teachers' work-life balance plays a significant role in their well-being. Teachers who are unable to balance their professional and personal lives often report higher stress levels and reduced job satisfaction (Duran et al., 2024).

In addition to these workplace factors, personal attributes such as self-efficacy and emotional intelligence are increasingly seen as key contributors to teacher wellbeing. Self-efficacy refers to a teacher's belief in their ability to manage classroom challenges effectively, and studies have shown that teachers with higher self-efficacy are more likely to experience greater job satisfaction and lower stress levels (Ortan et al., 2021). Similarly, emotional intelligence, which involves recognizing, understanding, and managing one's own emotions and those of others, has been linked to greater resilience and well-being among teachers (Kamboj & Garg, 2021). These individual qualities help teachers navigate the daily stresses of the profession and contribute to their overall sense of fulfillment.

Conceptualizing AI in Educational Contexts

AI is rapidly transforming education, ushering in a shift from conceptual ideas and theories to real-world applications in classrooms, universities, and online learning spaces (Belojev et al., 2024). As education systems globally grapple with evolving demands, AI has emerged not merely as a tool but as a catalyst for reimagining how learning happens, who facilitates it, and what skills will be required in the future workforce (Jaakkola et al., 2020). Its impact on teaching and learning extends beyond the automation of tasks, it is reshaping the very essence of education, urging us to reconsider traditional roles and processes.

A growing body of literature has sought to develop frameworks to ensure that AI is integrated meaningfully into educational practices. One such approach, created by an interdisciplinary team, emphasizes the need for teachers to be well-versed in AI systems. Their research suggests that without proper engagement and training, teachers risk being marginalized as passive consumers of technology rather than active participants in this digital revolution (Belojev et al., 2024). Thus, the role of the teacher is no longer confined to a traditional instruction model but is evolving into that of a facilitator, guiding students through dynamic, individualized learning experiences powered by intelligent systems.

AI's promise in education can be explored along two central dimensions: the content we teach and the way we teach it (Holmes et al., 2019). As AI reshapes industries and creates new markets, the content delivered in educational settings must also evolve to ensure that students are prepared for careers that did not exist even a decade ago (Holmes et al., 2019). Moreover, AI is transforming how we learn. From personalized learning paths to real-time feedback, AI tools support teachers by adapting instruction based on students' unique strengths and weaknesses (Jaakkola et al., 2020). This evolution makes education more flexible, enabling students to learn at their own pace, anytime, anywhere, and allowing teachers to focus more on mentoring and less on administrative tasks (Bobro, 2024).

The most compelling benefit of AI in education is its potential for personalization. Traditional education models often adopt a one-size-fits-all approach, but AI allows for tailor-made learning experiences. By utilizing algorithms to monitor and adjust teaching strategies based on real-time data, AI ensures that every student receives the specific support they need to succeed (Jaakkola et al., 2020). Furthermore, AI can automate routine administrative tasks, such as grading and attendance tracking, giving teachers more time to engage with students in more profound, more meaningful ways (Avurakoghene & Oredein, 2023).

Theoretical Framework: The JD–R Model

The JD–R Model, first proposed by Demerouti and Bakker in 2001, offers a robust and flexible theoretical framework for understanding the dynamic interplay between work-related stressors and well-being (Demerouti et al., 2001). It conceptualizes the work environment through two overarching categories: job demands and job resources. Job demands refer to aspects of work that require sustained physical, emotional, or cognitive effort, such as workload, time pressure, role conflict, or adapting to new technologies, and are generally associated with psychological and physiological strain. Job resources encompass the physical, social, or organizational elements that help individuals meet work goals, buffer the effects of job demands, and stimulate learning and development. These include autonomy, supportive leadership, peer collaboration, professional learning opportunities, and access to practical technological tools.

Crucially, the JD-R model posits two psychological mechanisms that shape work outcomes: the health impairment process and the motivational process. The health impairment process suggests that excessive or chronic job demands can lead to strain and eventual burnout, thereby diminishing teacher well-being. Conversely, the motivational process highlights how adequate job resources promote work engagement, job satisfaction, and professional resilience. The model has since evolved to include personal resources, traits such as self-efficacy, emotional intelligence, and adaptability, that empower individuals to manage demands more effectively and enhance the benefits derived from job resources (Granziera et al., 2021).

In this research, the JD-R model provides a nuanced lens for evaluating how the integration of AI into education intersects with teacher well-being. AI functions as a dual construct, serving as both a potential job resource and a new source of job demand. On the one hand, AI can automate administrative tasks such as grading, generate personalized insights into student progress, and support differentiated instruction. When supported by training and a conducive school climate, these technologies serve as valuable tools for job-related tasks, reducing workload and enabling more focused, creative, and effective teaching. On the other hand, the introduction of AI often raises expectations for teachers to rapidly learn unfamiliar systems, redesign lesson delivery, and address ethical or data-related concerns. These new responsibilities can create emotional and cognitive stress, especially in environments where training and support are inadequate. Findings reveal that perceived AI-related risks such as fears of job displacement, reduced pedagogical autonomy, or insufficient technical expertise, heighten anxiety and strain among teachers (Hu et al., 2025). This illustrates the health impairment process, particularly when supportive job resources are not readily available.

However, the same study also highlights the buffering role of both job and personal resources. Access to professional development, responsive leadership, a collaborative culture, and peer mentoring has been shown to mitigate AI-related stress and foster positive engagement. Additionally, personal attributes like openness to innovation and technological self-efficacy enhanced teachers' ability to adapt and view AI as a collaborative aid rather than a threat. These insights align with broader literature indicating that job and personal resources do not merely offset stress, they also activate engagement and innovation in high-demand settings (Wang et al., 2018). Notably, the JD-R model's adaptability allows it to account for differences in educational contexts.

Method

Thematic analysis was used to synthesize research on AI and teacher well-being in Nigeria. This approach was chosen because it helps clearly identify patterns across different types of studies and allows for explanations that go beyond just describing the findings (Braun & Clarke, 2006).

Search Strategy and Study Selection

The study selection process followed a systematic multi-stage approach to ensure transparency and rigor. Primary searches were conducted in ProQuest, Springer, Sage, and ScienceDirect, while Google Scholar and ResearchGate were used as supplementary discovery routes to ensure comprehensive coverage. Keywords such as “Artificial intelligence,” “teacher wellbeing,” “teacher stress,” “teacher workload,” “AI literacy,” “ethics,” and “Nigeria” were used. Initial searches across academic databases and discovery routes returned an estimated 58,625 records (i.e., total search hits displayed by the platforms). Because these figures represent search outputs rather than downloadable records, a refined subset of records was exported for screening. After exporting and consolidating records from all sources, 58,625 records were retained for screening, from which 200 duplicate records were identified and removed, resulting in 58,136 unique records for title and abstract screening.

Following this screening stage, 120 full-text articles were assessed for eligibility against the inclusion criteria. Of these, 106 were excluded for reasons including publication outside the 2020–2025 timeframe, non-Nigerian context, lack of focus on teacher wellbeing, non-peer-reviewed status, or inaccessible full text. This process resulted in a final sample of 14 studies included in the thematic analysis. The review process is summarized as follows:

- **Identification:** A total of 58,625 records were initially retrieved from electronic databases and discovery routes. All fourteen included items sourced were verified as having undergone formal peer-review by checking the original journal website.
- **Screening:** Following the removal of duplicates, 58,136 records were screened based on titles and abstracts to ensure they aligned with the core focus of AI in education within the Nigerian context.
- **Eligibility Assessment:** 120 full texts were assessed against strict inclusion and exclusion criteria, and 106 records were excluded.
- **Inclusion:** After this multistage screening process, 14 studies met all eligibility criteria and were retained for final thematic analysis. These included a mix of surveys, qualitative research, and conceptual papers.

Inclusion Criteria

Studies were included if they met all of the following criteria:

- Published between 2020 and 2025
- Focused on AI in educational contexts within Nigeria

- Examined implications for teacher wellbeing, workload, professional practice, or psychological experiences
- Published in peer-reviewed academic journals
- Available in English language
- Full text accessible for review
- Empirical, conceptual, or review studies relevant to the research aim

The search, screening, and selection process is summarized in Table 1 and Table 2 while Figure 1 shows the PRISMA flow diagram.

Results

Table 1: Search results from academic databases

	Database	Records found after the search	Exclusion criteria	Final Count Based on Summary Review
Academic Databases	ScienceDirect	6,400	Excluded studies were those published outside the 2020–2025 timeframe, not appearing in peer-reviewed journals, unrelated to education, conducted outside Nigeria, published in languages other than English, or lacking accessible full texts.	0
	ProQuest	20,627		1
	Sage	1,500		2
	Springer	6,001		2

Table 2: Search results from discovery routes

	Discovery Route	Records found after the search	Exclusion criteria	Final Count Based on Summary Review
Discovery Routes <i>(all included studies were verified as peer-reviewed publications)</i>	Google Scholar	16,000	Excluded studies were those published outside the 2020–2025 timeframe, not appearing in peer-reviewed journals, unrelated to education, conducted outside Nigeria, published in languages other than English, or lacking accessible full texts.	4
	ResearchGate	8,097		5

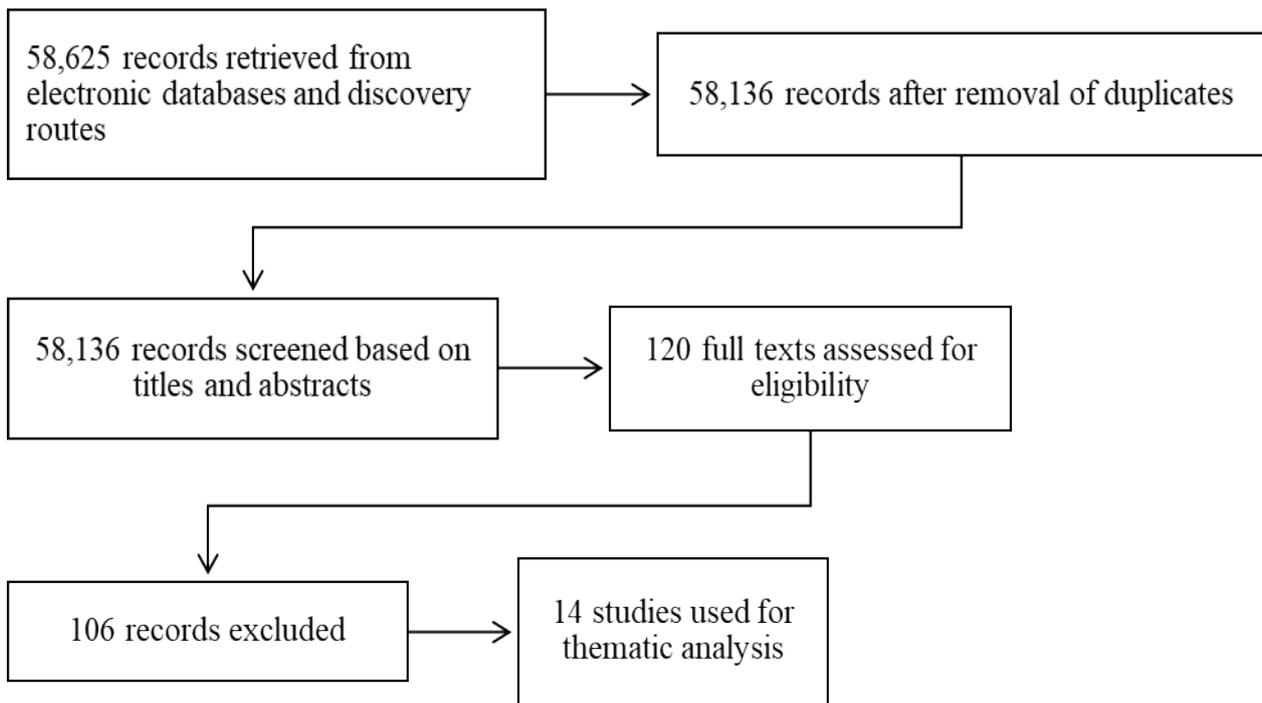


Figure 1: PRISMA flow diagram

Analytical Framework

The JD–R model was used to help interpret how changes related to AI create job demands, like increased mental effort, too many tasks, and uncertainty, as well as job resources such as reduced workload, support for skills development, and greater autonomy. This model guided how the findings were understood in relation to teacher wellbeing. The JD–R model was used to inform the analysis, but it did not limit the types of codes or evidence considered.

Theme Development Process

Themes were developed using a straightforward, step-by-step process:

1. **Familiarisation:** Each study was read completely, focusing on outcomes for teachers like workload, stress, confidence, integrity, and motivation.
2. **Initial Coding:** Parts of the text were labeled with simple descriptions that matched the claims or evidence, such as “*workload reduction*,” “*skills gap*,” “*ethical anxiety*,” “*infrastructure barrier*,” and “*assessment automation*.”
3. **Code Refinement and Consolidation:** Similar codes were combined, and unclear codes were made more precise to keep meanings consistent across all studies.
4. **Theme Construction:** Codes were grouped into possible themes based on common ideas and causes, for example, how gaps in skills can lead to technostress. In the next step, these themes were reviewed using the JD–R model to determine whether they functioned primarily as demands, resources, or context factors, without altering the original evidence to fit predefined categories.

5. Synthesis Write-up: The findings were written up to explain how AI-related factors connect to teacher well-being in Nigerian education.

Major Themes that Emerged

The thematic analysis of the fourteen reviewed studies revealed four overarching themes that collectively explain how AI influences teacher wellbeing in Nigerian educational contexts. These themes align with the research questions and are interpreted through the lens of the JD–R model, which distinguishes between stress-inducing job demands and supportive job resources that enhance well-being.

Theme 1: Teacher Wellbeing as a Multidimensional Outcome Shaped by AI-Mediated Work Design

Throughout the reviewed literature, there is consistent evidence that teacher wellbeing is not a single psychological state but rather a multifaceted phenomenon with emotional, cognitive, and professional components. Scholars provided concrete support for this interpretation by demonstrating how teachers' emotional strain, role expectations, and feeling of professional value are altered by evolving technology and working settings (Caleb & Fumen, 2025; Akinbode, 2025). The ability of teachers to comprehend, manage, and confidently use AI tools in the classroom is intimately linked to cognitive wellness, according to empirical research on AI literacy and instructional practice (Ewa, 2024; Fwangle et al., 2025; Nwoke et al., 2025).

The most obvious evidence of professional wellbeing can be found in research that looks at AI as a tool to enhance teaching creativity and effectiveness. Instructors report higher levels of competence, motivation, and occupational meaning when AI improves professional development, curriculum design, or assessment quality (Oluyemisi et al., 2025). On the other hand, narrative and policy-focused studies emphasize that when AI adds more monitoring, evaluation demands, or performance expectations without matching resources, emotional strain increases (Ayo, 2025; Ahmed, 2025).

When analysed using the JD–R framework, these findings show that AI concurrently reconfigures job demands and job resources, changing wellbeing. AI serves as a job resource that improves professional contentment when it boosts autonomy, skill use, and instructional control (Ewa, 2024; Lawanson & Ozurumba, 2025). On the other hand, research demonstrate how emotional stress and cognitive overload increase when AI increases workload, role ambiguity, or monitoring (Akinbode, 2025; Caleb & Fumen, 2025). Therefore, this theme goes beyond JD–R by demonstrating how professional, emotional, and cognitive health co-evolve within AI-mediated job design as opposed to functioning as distinct outcomes. This theme is supported by Caleb & Fumen (2025), Akinbode (2025), Ewa (2024), Fwangle et al. (2025), Nwoke et al. (2025), Oluyemisi et al. (2025), Ayo (2025), Ahmed (2025), and Lawanson & Ozurumba (2025).

Theme 2: Uneven AI Integration and Capability Gaps as Escalating Job Demands

The uneven integration of AI creates various experiences of opportunity and stress in Nigerian educational contexts, which is the second theme among the 14 research. While institutional reviews by Oparaduru and Uchendu (2024) and Oluyemisi (2023) highlight unequal infrastructure, policy implementation, and institutional readiness, empirical surveys like Fwangle et al. (2025) and Ewa (2024) show significant differences in AI literacy across gender, school type, and location.

Increased employment demand is sometimes attributed to capability gaps, including inadequate training, poor technical support, and lack confidence in the application of AI. Studies all specifically describe this pattern, demonstrating that teachers are expected to incorporate AI into their lessons without sufficient planning (Fwangle et al., 2025; Nwoke et al., 2025; Okunade, 2024). Additionally, narrative analyses show that the adoption of AI frequently coexists with current teaching duties, resulting in role overload and ongoing cognitive strain (Ahmed, 2025; Caleb & Fumen, 2025).

Together, these studies demonstrate how, when capability development falls behind technology advancement, AI becomes an additional demand rather than a potential resource within the JD–R paradigm. Research shows that even technologies that reduce effort (such AI-driven evaluation) can make teachers feel more stressed if they don't have the institutional support or the necessary skills (Ayo, 2025; Dagunduro et al., 2025). According to the analysed Nigerian evidence, this topic refutes deterministic assertions that AI automatically makes teaching easier and instead demonstrates how, in situations with limited resources, AI can exacerbate inequity, anxiety, and professional fragility. This theme is supported by Oparaduru & Uchendu (2024), Oluyemisi (2023), Fwangle et al. (2025), Ewa (2024), Nwoke et al. (2025), Okunade (2024), Ahmed (2025), Caleb & Fumen (2025), Ayo (2025), and Dagunduro et al. (2025).

Theme 3: Ethical Governance, Trust, and Professional Integrity as Psychosocial Moderators

The reviewed literature identifies ethical uncertainty as a crucial psychosocial component influencing teacher welfare in AI-enabled workplaces, in addition to workload and skill levels. Empirical evidence show that teacher integrity and professional confidence are significantly predicted by transparency and accountability in AI use (Apie, 2025). Another complementary research emphasises ongoing worries about algorithmic opacity, data privacy, and accountability for AI-mediated decisions, especially in evaluation and performance tracking (Oparaduru & Uchendu's, 2024; Oluyemisi's, 2023).

Ethical ambiguity erodes trust and increases anxiety, particularly when teachers believe that mistakes will be misattributed or that their reputation will be harmed, according to studies on teacher attitudes and professional identity (Ekanem et al., 2025; Ahmed, 2025). According to JD-R, these moral ambiguities serve as psychological demands on teachers' jobs, which diminishes their sense of control and work stability. On the other hand, a study offers concrete proof that unambiguous ethical frameworks serve as workplace resources by promoting emotional safety, professional validity, and trust (Apie, 2025).

This theme goes beyond the JD–R paradigm by showing that ethical governance is a resource for wellbeing in AI-mediated work. While JD-R has historically placed a strong focus on social support and task demands, the Nigerian research examined here highlight the importance of moral clarity, accountability, and trust in maintaining wellbeing in digitally monitored learning contexts. This theme is supported by Apie (2025), Oparaduru & Uchendu (2024), Oluyemisi (2023), Ekanem et al. (2025), and Ahmed (2025).

Theme 4: Institutional Support and Structural Conditions as Determinants of Resource Activation

The last theme summarises data demonstrating that institutional and infrastructure factors influence whether AI acts as a latent stressor or as a helpful resource. Several empirical investigations document enduring issues such inadequate equipment, erratic electricity, and poor internet access (Okunade, 2024; Nwoke et al., 2025; Dagunduro et al., 2025). These circumstances not only add to the strain but also negate the potential advantages of AI solutions, frequently leading to more aggravation than comfort.

On the other hand, research focusing on organised capacity building and organisational assistance, demonstrates that teachers may transform AI into useful job resources through training, mentorship, and coordinated leadership (Lawanson & Ozurumba, 2025; Ewa, 2024). Further evidence demonstrated that institutional coordination and policy clarity regulate teachers' professional and emotional reactions to AI adoption (Ahmed, 2025; Oparaduru & Uchendu, 2024).

These results demonstrate that job resources are context-dependent rather than technology-inherent within the JD–R framework. Regardless of AI's technical potential, Nigerian research indicates that it increases employment demands in the absence of supportive infrastructure and governance. Thus, this theme draws attention to the need for system-aware, institutionally grounded studies of teacher welfare in AI-mediated education and warns against decontextualised implementations of JD-R. This theme is supported by Okunade (2024), Nwoke et al. (2025), Dagunduro et al. (2025), Lawanson & Ozurumba (2025), Ewa (2024), Ahmed (2025), and Oparaduru & Uchendu (2024).

Discussion

The findings of this study provide a nuanced understanding of how AI shapes teachers' well-being in Nigerian educational contexts. Interpreted through the JD–R model, the results reveal that AI integration generates both positive and negative implications for teachers' emotional, cognitive, and professional well-being. This duality supports the model's central proposition that work environments contain elements that can function simultaneously as demands, creating strain and burnout, and as resources, enhancing motivation and job satisfaction (Bakker & Demerouti, 2007).

The reviewed literature demonstrates that AI integration can heighten job demands by imposing new responsibilities and stressors on teachers. Increased workload, role overload, and the pressure to master emerging technologies are recurrent challenges (Caleb & Fumen, 2025). These findings align with prior research suggesting that technological innovations often outpace teachers' preparedness, generating cognitive overload and anxiety (Ertmer & Ottenbreit-Leftwich, 2010). Inadequate digital training, poor infrastructural support, and limited institutional guidance further exacerbate stress, mirroring similar concerns in developing contexts.

Ethical and data privacy issues identified in the reviewed studies (Oparaduru & Uchendu, 2024; Oluyemisi, 2023) add a psychosocial layer to these job demands. Teachers often express uncertainty regarding the surveillance capacities of AI systems and the protection of student data, concerns echoed globally in the AI-in-education discourse (Nemorin et al., 2023). Such factors collectively undermine emotional well-being, suggesting that the absence of ethical clarity and structural support transforms AI from a pedagogical aid into a stress-inducing burden.

Conversely, the findings highlight substantial job resources embedded in AI adoption. Many of the reviewed studies reported that AI enhances instructional efficiency, enables personalized learning, and supports innovation in curriculum delivery (Oluyemisi, 2023; Oparaduru & Uchendu, 2024). These opportunities foster autonomy and competence, two critical components of teacher wellbeing and intrinsic motivation. Consistent with the JD–R model, such resources act as protective factors that buffer the effects of job demands (Bakker & Demerouti, 2017).

The role of institutional and organizational support also emerged as a vital determinant of positive well-being outcomes. Research demonstrated that when teachers perceive high organizational support, the negative effects of digital workload and burnout are significantly reduced (Ewa, 2024). Similarly research emphasized that well-structured professional development initiatives, university–industry collaborations, and digital literacy programmes can enhance teachers’ confidence and adaptability (Ahmed, 2025). This reflects previous studies indicating that access to adequate job resources such as training, collaboration, and recognition, stimulates work engagement and professional satisfaction (Skaalvik & Skaalvik, 2018).

Thus, the findings illustrate that teachers' well-being in AI-enhanced learning environments depends on the balance between demands and resources. When teachers are adequately trained, technologically supported, and ethically protected, AI serves as a motivator that improves job satisfaction and self-efficacy. However, in contexts marked by infrastructural deficits, weak institutional backing, and unclear ethical policies, AI integration exacerbates emotional fatigue and disengagement. This dynamic highlights the JD–R model’s explanatory power in understanding how contextual factors mediate the relationship between technology use and teacher wellbeing.

The Nigerian context presents additional challenges, such as unequal access to digital resources, underinvestment in professional development, and inconsistent policy implementation, that amplify these imbalances. Nonetheless, the emerging evidence also signals opportunities for transformation. By embedding AI adoption within comprehensive teacher support systems, educational institutions can enhance not only instructional quality but also teacher wellbeing and retention.

Theoretical and Practical Implications

Theoretically, this study extends the application of the JD–R model to technology-mediated educational environments in Nigeria, demonstrating its relevance for analyzing both psychological strain and motivational outcomes among teachers. Practically, the findings suggest that policymakers and school leaders should prioritize teacher-centred AI strategies. These include continuous digital skills training, reliable infrastructure investment, ethical governance frameworks, and psychosocial support mechanisms. By aligning technological innovation with human well-being, educational systems can ensure that AI acts as an enabler of professional growth rather than a source of occupational stress.

Conclusions

This study explored how AI affects teacher well-being in Nigerian schools by analyzing both empirical and conceptual research. Using the JD–R model, the results show that bringing AI into education can offer benefits and also create new challenges for teachers’ emotional, cognitive, and professional well-being. The literature often points out that AI can make teaching more efficient, encourage new teaching methods, and help with professional growth. However, the evidence also shows that using AI can increase teachers’ workload, require new digital skills, raise ethical questions, and depend on institutional support that is not always available. The studies reviewed show that teacher well-being outcomes vary widely depending on factors such as available resources, infrastructure, AI knowledge, and policies. This means teachers’ experiences with AI vary across contexts, and the balance between job demands and resources depends on the context. When teachers have enough training, clear ethical guidelines, and support from their organizations, AI is more likely to help them feel motivated and engaged. On the other hand, in places with fewer resources or weak regulations, AI is associated with greater stress, uncertainty, and pressure for teachers.

Recommendations

1. Ministries of Education and policymakers should develop comprehensive AI integration policies that explicitly include teacher well-being provisions. Ethical standards, data privacy, and workload management guidelines should be embedded in all AI-driven educational initiatives.
2. Regular digital-skills training, mentorship, and collaborative learning platforms should be provided to help teachers adapt to emerging technologies confidently. Professional development programs should focus on both technical competence and emotional resilience.
3. Schools and educational authorities must ensure equitable access to digital tools, stable internet connectivity, and technical support systems. These job resources are essential for reducing technostress and promoting sustained teacher engagement.
4. Developers and educational technology firms should involve teachers in the design and implementation of AI tools to ensure usability, contextual relevance, and alignment with pedagogical goals.

Declarations

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Appendix

Table 1: Summary of Studies Included in the Thematic Analysis of AI and Teacher Wellbeing in Nigeria

Author(s) / Year	Study type / design	Setting/sample	AI focus	Teacher wellbeing dimension(s)	Key relevant findings
Ewa (2024)	Descriptive survey	1,000 primary school teachers (Nigeria)	AI literacy (knowledge, use, ethics)	Professional; cognitive wellbeing	AI literacy predicts skill enhancement; lack of training limits confidence.
Apie (2025)	Descriptive survey (regression)	1,600 public primary school teachers, Cross River State	Ethics of AI	Professional integrity; moral wellbeing	Ethical AI practices predict teacher integrity; absence of guidelines creates anxiety.
Fwangle et al. (2025)	Survey research	77 Physics teachers, Plateau State	AI literacy disparities	Cognitive; professional wellbeing	Low AI literacy heightens insecurity, especially in public schools.
Oparaduru & Uchendu (2024)	Narrative/systematic review	ODL institutions, Nigeria	AI in ODL and e-learning	Workload; professional wellbeing	AI enables personalised learning but raises ethical and data-privacy concerns.
Dagunduro et al. (2025)	Descriptive survey	100 primary school teachers, Ogun State	AI in early childhood education	Workload; emotional wellbeing	AI-driven assessment reduces workload; lack of training causes stress.
Lawanson & Ozurumba (2025)	Correlational survey	363 secondary school teachers, Bayelsa State	AI for teacher development	Professional motivation; job satisfaction	AI-based training positively relates to quality assurance and motivation.
Caleb & Fumen (2025)	Conceptual review	Nigeria (national scope)	Digitalisation and AI tools	Workload; role strain	Digitalisation expands roles and workload without adequate support.
Ekanem et al. (2025)	Survey (correlational)	400 lecturers & students, Colleges of Education	AI for instructional delivery	Professional confidence	Positive AI attitudes improve instructional confidence.
Ahmed (2025)	Narrative review	Secondary schools, Nigeria	AI and teacher productivity	Job satisfaction; emotional wellbeing	AI improves productivity but welfare and digital divide limit benefits.
Okunade (2024)	Retrospective analysis	Secondary schools, Nigeria	AI in science teaching	Cognitive load; professional efficacy	AI enhances adaptive learning; infrastructure gaps increase stress.
Oluyemisi (2023)	Conceptual review	Tertiary institutions, Nigeria	AI in curriculum development	Professional autonomy; cognitive wellbeing	AI supports curriculum innovation but raises re-skilling pressures.
Nwoke et al. (2025)	Descriptive survey	Teacher training institution, Imo State	AI in mathematics education	Cognitive confidence; workload	AI improves teaching effectiveness; lack of competence frustrates teachers.

Ayo (2025)	Position paper	Nigerian classrooms	AI-driven assessment tools	Workload; emotional wellbeing	AI reduces marking burden but ethical and equity risks remain.
Akinbode (2025)	Correlational survey	364 teachers, Lagos State	Digital working conditions	Psychological wellbeing	Poor work conditions exacerbate stress, framing AI as added demand.