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The Impact of Artificial Intelligence on Human Resource Efficiency: Enhancing Teachers' Performance in Educational Institutions

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Abstract- This study examines the impact of artificial intelligence (AI) on human resource efficiency among secondary teachers in international schools. While AI is increasingly promoted as a means to reduce teacher workload and enhance productivity, empirical evidence from school settings—particularly international schools—remains limited. The research focuses on how AI is used in teachers' work, how it affects perceived workload and efficiency, and how organisational conditions shape these effects. A quantitative, cross-sectional survey design was employed. Data were collected from 150 secondary teachers working in 18 international schools, using a structured online questionnaire. The instrument captured AI usage patterns, perceptions of AI (perceived usefulness, perceived ease of use, AI anxiety, autonomy), HR-efficiency outcomes (perceived administrative workload, instructional efficiency, overall efficiency, job satisfaction) and organisational factors (leadership support, training and infrastructure). Descriptive statistics, reliability and factor analyses, correlations and multiple regression models were used to analyse the data. Findings indicate that AI is widely used for lesson planning, resource creation and assessment, but less so for administrative work and rarely for pastoral care or live classroom interaction. Teachers generally perceive AI as useful and moderately easy to use, yet administrative workload remains high. Perceived usefulness and actual AI usage are strong positive predictors of instructional and overall efficiency, and are associated with somewhat lower perceived administrative workload. AI anxiety is linked to higher workload and lower efficiency. Organisational support—through leadership, training and clear policies—consistently amplifies positive outcomes and reduces anxiety. The study concludes that AI currently offers incremental rather than transformative efficiency gains. Its contribution to human resource efficiency and teacher well-being depends on strategic, task-focused implementation and supportive organisational conditions, rather than on technology alone. Recommendations are offered for school leaders, HR practitioners and teachers, alongside directions for future research on AI, workload and sustainability in international education.

Keywords – Artificial Intelligence (AI); Human Resource Efficiency; Teacher Workload; Instructional Efficiency; AI Usage; AI Anxiety; Perceived Usefulness; Organisational Support; International Schools; Secondary Teachers; Educational Technology; Quantitative Survey.

I. INTRODUCTION

Overview

The rapid diffusion of artificial intelligence (AI) across sectors has transformed how organisations manage people, processes, and performance. In human resource management (HRM), AI is no longer seen merely as a set of tools for automation, but as a strategic capability that reshapes talent management, decision-making, and organisational design (Úbeda-García et al., 2025). Systematic reviews indicate that AI-based HR practices can reduce transaction time, increase efficiency, and support more data-driven and personalised HR processes, while simultaneously raising new questions about fairness, transparency, and technostress (Venugopal, 2024; Ekuma, 2024).

Within education systems, schools are increasingly subject to similar pressures for efficiency, accountability, and data-informed decision-making. Teachers, as the largest and most critical human resource in schools, operate in a context of intensifying workload and accountability demands. Recent international studies document a pattern of work intensification, time poverty, and administrative overload among teachers, which undermines their well-being and

threatens retention (Creagh, 2025). Large-scale surveys such as TALIS 2024 show that, in many systems, experienced teachers report administrative workload as one of the most salient sources of stress, often more so than instructional tasks themselves.

The consequences of this workload crisis are substantial. Empirical work has found strong positive relationships between teachers' workload, burnout levels, and reduced work performance (Magtalas & Eduvala, 2024). Excessive administrative duties, planning, marking, and compliance activities divert time and energy from core pedagogical work, weaken teacher–student relationships, and contribute to higher intentions to leave the profession (Diploma Collective, 2025). These patterns are particularly relevant for secondary education, where escalating curricular demands, high-stakes examinations, and increased reporting obligations further intensify the pressure on teachers' time.

Against this backdrop, AI is increasingly promoted as a means of improving both organisational and individual efficiency in schools. In educational contexts, AI tools already support functions such as automated assessment, learning analytics, personalised tutoring, lesson planning support, and the automation of routine administrative tasks (Wang et al., 2024). Studies on AI-driven assessment systems, for example, suggest that automated grading, real-time feedback, and analytics dashboards can substantially reduce the time teachers spend on repetitive marking and routine feedback, allowing them to redirect effort toward higher-value activities such as differentiated instruction and student mentoring (Ishaq et al., 2025).

From an HR efficiency perspective, these tools have implications beyond classroom practice. AI-based systems can support workload allocation, performance monitoring, professional development planning, and data-informed decision-making at the school level, thereby influencing how human resources—teachers—are deployed and supported. Conceptual work on AI in HRM highlights benefits such as time savings, enhanced objectivity, and automation across core HR functions, while cautioning that these benefits depend on careful design, ethical governance, and human oversight (Thakur, 2025; Anh, 2025).

However, in the school context, the relationship between AI adoption and teachers' perceived efficiency is far from straightforward. First, the integration of AI may itself generate new demands, such as learning to use unfamiliar systems, engaging with additional data dashboards, or adapting pedagogical practices to align with automated tools. Reviews of AI in education emphasise that while AI can reduce some forms of workload, it may also shift or intensify others, and can introduce concerns about data privacy, algorithmic bias, and the erosion of professional autonomy (Yan et al., 2024; Wang et al., 2024).

Second, teachers' acceptance of and attitudes toward AI are critical. Research applying the Technology Acceptance Model (TAM) and related frameworks in educational settings shows that perceived usefulness and perceived ease of use, along with institutional support, self- efficacy, and intrinsic motivation, significantly shape teachers' willingness to adopt AI tools (Hazzan-Bishara, 2025; Jiang, 2025). Yet much of this work focuses on intention to use or attitudes toward AI, rather than on how AI adoption actually relates to perceived efficiency, workload, or HR-related processes in day-to-day school practice.

Third, the specific context of international schools—and especially secondary international schools—has been underexplored. International schools often operate in highly competitive environments, characterised by diverse student populations, externally benchmarked curricula (e.g., IB, IGCSE), and strong expectations from parents and governing bodies for innovation and high performance. These conditions can lead to both rapid experimentation with AI tools and heightened pressure on teachers to produce measurable outcomes. Yet there is limited empirical evidence on how AI-enabled systems in such schools affect teachers' perceived HR efficiency—understood here as the effective and sustainable use of teachers' time, skills, and effort in relation to administrative, instructional, and developmental tasks.

Taken together, the literature suggests three key gaps. First, while AI in HRM is increasingly well documented at the organisational level, there is comparatively little work that connects these insights to the school as an organisation and to teachers as a specific category of human resource. Second, research on AI in education often emphasises learning outcomes, technological capabilities, or adoption intentions, but pays less attention to teachers' own perceptions of efficiency, workload, and HR-related processes in AI-enabled school environments. Third, empirical studies rarely focus on secondary teachers in international schools, who may face distinct demands and organisational cultures compared with teachers in national systems.

Purpose of the Study

This study addresses these gaps by examining how AI use in schools relates to human resource efficiency from the perspective of secondary school teachers. Specifically, it focuses on teachers working in international school settings and investigates how AI tools— such as automated grading systems, AI-assisted lesson planning, learning analytics platforms, and administrative automation—are perceived to influence their efficiency, workload, and professional functioning.

To achieve this, the study adopts a quantitative, cross-sectional survey design. Approximately 150 secondary teachers

employed in international schools will be invited to complete a structured questionnaire capturing (a) their exposure to and use of AI tools in school-related tasks, (b) their perceptions of changes in administrative and instructional workload, (c) their perceived efficiency and job performance, and (d) contextual factors such as institutional support and professional development opportunities related to AI. Focusing on this group enables the study to capture the views of teachers who operate in complex, often high-performing, international environments where AI adoption may be relatively advanced but unevenly implemented.

Research Objectives and Questions

- **Aligned with this purpose, the study pursues the following objectives:**

1. To examine the extent and patterns of AI tool use among secondary teachers in international schools.
2. To analyse how teachers perceive the impact of AI on their efficiency, particularly in relation to administrative tasks, instructional practices, and professional development.
3. To explore the relationship between AI use, perceived workload, and perceived HR efficiency (e.g., time savings, task reallocation, perceived performance).
4. To identify contextual and organisational factors (e.g., institutional support, training, policies) that facilitate or hinder the efficient use of AI for teachers in international schools.

These objectives guide the following research questions:

1. To what extent, and for which tasks, do secondary teachers in international schools currently use AI tools?
2. How do these teachers perceive the impact of AI on their individual efficiency, workload, and core teaching responsibilities?
3. What is the relationship between the intensity/type of AI use and teachers' perceptions of HR efficiency in their schools?
4. Which forms of institutional support and governance are associated with more positive efficiency outcomes from AI use?

By addressing these questions, the paper seeks to contribute to both the AI-in-HRM and AI- in-education literatures. It offers empirical evidence on how AI adoption at school level intersects with teacher workload, efficiency, and well-being, and provides practical insights for school leaders and policymakers seeking to deploy AI in ways that genuinely enhance, rather than erode, teachers' human resource sustainability.

II. LITERATURE REVIEW

Artificial Intelligence in Human Resource Management

The intersection of artificial intelligence (AI) and human resource management (HRM) has been the focus of several recent systematic reviews. These studies converge on the idea that AI is reshaping HR processes by automating routine tasks, enabling data-driven decision-making, and personalising aspects of the employee experience. A PRISMA-based review of AI in HRM (2019–2025) highlights that AI is predominantly deployed in recruitment, performance evaluation and talent management, where it streamlines candidate screening, reduces time-to-hire, and supports ongoing performance monitoring. Another systematic review frames AI as an enabling technology that can improve organisational efficiency but simultaneously raises ethical concerns related to transparency, fairness, and human–AI collaboration.

A more recent bibliometric analysis of 203 articles (2002–2024) maps six strategic themes in AI–HRM research, including automation, predictive analytics, decision support, and the personalisation of employee experiences. This work underscores that AI can be a lever for strategic HRM by reallocating human effort from transactional to strategic activities. At the same time, it emphasises tensions around algorithmic control, information overload and AI- induced job insecurity, all of which can affect employee well-being and perceptions of fairness.

Despite this rich organisational literature, schools feature only marginally in AI–HRM research. Most empirical studies are situated in corporate or public-sector contexts and conceptualise HR efficiency mainly in terms of recruitment speed, cost savings, or predictive performance analytics, rather than the day-to-day efficiency of professionals such as teachers. This suggests a first gap: the HRM lens on AI has rarely been applied to educational institutions, and almost never to teachers as a distinct category of human resource whose time and expertise must be deployed efficiently and sustainably.

Teacher Workload, Burnout and Human Resource Efficiency in Schools

The question of human resource efficiency in schools cannot be separated from the well- documented problem of teacher workload and burnout. A growing body of research shows that excessive workload, particularly non-teaching and administrative demands, is a major driver of stress and burnout among teachers. A recent systematic review of teacher burnout identifies heavy workloads, role overload and administrative pressures as consistent predictors of emotional exhaustion across primary and secondary settings. Large-scale international surveys reinforce this picture: the OECD TALIS 2024/2025 reporting cycle indicates that around half of lower-secondary teachers in OECD systems identify excessive administrative work as a key source of work-related stress.

Empirical studies at national and local level further refine these findings. Research on "extra-administrative workload" in schools shows that additional reporting, compliance and data entry requirements significantly predict teachers' emotional

exhaustion. Other work demonstrates that teachers' time is increasingly fragmented across activities such as paperwork, system inputs and community engagements, with non-teaching responsibilities linked to lower job satisfaction and reduced performance. In some systems, teachers report spending many hours per week on administrative tasks alone, often without clear understanding of who uses the data or how it improves learning.

From an HR perspective, these findings point to a structural inefficiency: schools are investing significant teacher time in tasks that could, in principle, be automated or streamlined. Yet the literature on workload and burnout typically does not frame its analysis explicitly in terms of human resource efficiency or link it systematically to AI-enabled process redesign. This suggests a second gap: while the burden of administrative work is well documented, there is limited research on how AI-based systems might reshape the allocation of teachers' time across administrative, instructional and developmental tasks.

AI in Education and Its Implications for Teachers' Work

Parallel to the HRM literature, AI in education has been widely studied as a driver of innovation in teaching and learning. A landmark review by Chen and colleagues synthesises work up to 2020 and shows that AI has been deployed to support administrative processes (e.g. grading, feedback, plagiarism detection), curriculum and content development, and adaptive instruction. The review concludes that AI has improved the efficiency of administrative tasks such as reviewing student work, grading and providing feedback, thereby reducing paperwork and freeing time for pedagogical work.

More recent work has focused explicitly on teachers' use of AI. A systematic review of research between 2015 and 2024 on AI in teaching and teacher professional development identifies a strong emphasis on AI applications in instruction (e.g. conversational agents, AI- driven learning and assessment systems, learning analytics), with comparatively less attention to how AI supports teachers' professional learning and day-to-day work practices. The review highlights the need to consider teachers not only as implementers of AI tools for students, but also as workers whose own tasks, roles and development are directly shaped by AI.

Empirical and conceptual studies further illustrate how AI can affect teachers' workload and perceived efficiency. Jiménez (2024) describes how integrating AI into traditional teaching roles automates tasks such as grading, attendance tracking and assignment organisation, which in turn streamlines workload and allows teachers to devote more attention to individualized instruction and classroom interaction. Similarly, a World Bank brief on the "AI revolution in education" reports that AI-powered learning platforms and automated assessment systems can significantly reduce the administrative burden on teachers by handling grading, centralising student data and supporting streamlined communication with students and parents.

Focused analyses of AI-driven assessment systems echo these claims but also introduce nuance. Thomas (2025) synthesises case studies of tools such as Gradescope and Turnitin's Feedback Studio and finds that AI-based grading and feedback can reduce grading time dramatically—sometimes by up to 80% in large courses—while providing real-time analytics on student performance. However, these systems also raise concerns about bias, explainability and overreliance on automation, which can affect teachers' sense of professional autonomy and responsibility.

Across these studies, AI is consistently portrayed as having potential to improve teachers' efficiency by automating routine tasks and providing data-rich insights. Yet several limitations are evident:

- Most work focuses on specific tools or functions (e.g. automated assessment, learning analytics) rather than holistic measures of teachers' overall efficiency across their role.
- Outcomes are often described qualitatively or anecdotally ("reduced workload", "time savings"), without being operationalised as measurable constructs such as perceived efficiency, time allocation or HR-related outcomes.
- Few studies explicitly connect AI adoption to teacher well-being, job satisfaction or retention, even though these are central HR considerations.

Thus, a third gap emerges: there is limited quantitative evidence linking AI use in schools to teachers' perceived efficiency, workload distribution and broader HR outcomes such as satisfaction and intentions to stay.

Teachers' Acceptance of AI: Technology Acceptance and Related Models

Another important strand of literature examines teachers' acceptance of AI using frameworks such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT).

Runge et al. (2025) apply TAM to pre-service teachers and show that AI-related technological pedagogical content knowledge (AI-TPACK) and participation in AI-related courses positively influence perceived usefulness and perceived ease of use, which in turn predict both intention and actual use of AI for profession-related tasks. Brandhofer (2025) finds similarly that the acceptance of AI applications among teachers and student teachers is strongly associated with perceived usefulness, ease of use, and attitudes, drawing explicitly on technology acceptance models.

In a study of secondary school teachers using a modified UTAUT framework, Effort Expectancy and AI Anxiety emerge as significant predictors of teachers' behavioural intention to

adopt AI in teaching and learning, highlighting the importance of both perceived ease and emotional responses to AI. A concept paper by Khoo and Jamaludin (2025) further argues—again within TAM—that teacher self-efficacy, digital literacy, teaching experience and subjective norms should be considered as external variables shaping AI acceptance in education.

These studies collectively indicate that:

- Perceived usefulness and perceived ease of use/effort expectancy are robust predictors of teachers' intention to use AI.
- AI-related anxiety and technostress can dampen behavioural intention, even when perceived usefulness is high.
- Training, knowledge (AI-TPACK) and institutional support are important enabling conditions for AI adoption.

However, this acceptance literature also has its own limitations. First, it is heavily oriented toward intention to use and self-reported adoption, rather than the consequences of AI use for teachers' efficiency, workload or HR-related outcomes. Second, many studies focus on pre-service or early-career teachers, which may not reflect the experiences of more experienced staff in complex institutional settings such as international schools.

This suggests a fourth gap: we know a great deal about the factors that shape teachers' acceptance of AI, but far less about how accepted and actually-used AI tools translate into changes in perceived efficiency, workload and job-related outcomes.

AI in International Schools

International schools constitute a distinctive educational context characterised by diverse student populations, externally benchmarked curricula (e.g. IB, IGCSE) and strong expectations for innovation and high performance. Sector reports and practitioner-oriented resources suggest that international schools are often at the forefront of experimenting with AI tools. For example, global case-study collections describe international and high- performing schools using AI to personalise learning, support assessment, and manage administrative tasks, with reported benefits for teacher workload and student engagement.

The Council of British International Schools (COBIS) has highlighted "AI lighthouse schools" that are actively piloting AI for teaching, learning and administration, while also warning about common pitfalls such as tool fragmentation, lack of coherent strategy and insufficient staff training. A recent case study from an international IB school in the UK explores students' and one mathematics teacher's perspectives on an AI implementation, finding perceived benefits in learning experiences and feedback, but also noting current limitations and the need for more systematic evaluation.

Despite these indications, the evidence base on AI in international schools remains thin and fragmented:

- Much of it is grey literature (webinars, sector reports, blogs) rather than peer- reviewed empirical research.
- Existing case studies often involve very small samples (e.g. a single teacher and a handful of students) and focus on teaching and learning outcomes rather than teacher efficiency or HR processes.

This points to a fifth gap: there is a lack of systematic, survey-based research on how AI is used by teachers in international schools, and how such use is related to perceptions of workload, efficiency and organisational support.

Synthesis of Gaps and Implications for Survey Variables

Taken together, the literature reveals several converging themes and clear gaps that your study is well placed to address:

1. Missing HRM lens in school-based AI research

- AI–HRM studies show that AI can enhance organisational efficiency but seldom examine educational institutions or teachers as a specific human resource category.
- School-based AI studies rarely frame their findings in terms of human resource efficiency (optimal and sustainable deployment of teachers' time and effort).

2. Under-measured impact of AI on teachers' efficiency and workload

- AI-in-education work documents automation of grading, feedback and administrative processes, but often relies on qualitative claims about "time savings" or "reduced workload," rather than validated measures of perceived efficiency, time allocation or HR outcomes.

3. Outcome focus on learning rather than teachers' well-being and HR sustainability

- Teacher workload and burnout literature clearly shows that excessive administrative and extra-administrative work is harmful to well-being, job satisfaction and performance.
- Yet, studies seldom examine whether AI helps restructure workload in ways that improve teachers' well-being, satisfaction or intentions to stay.

4. Disconnect between acceptance models and HR/efficiency outcomes

- TAM/UTAUT-based studies identify key predictors of AI adoption—perceived usefulness, ease of use, AI anxiety, training and institutional support—but rarely link these to concrete changes in perceived efficiency, workload or job satisfaction.

5. Lack of evidence from international secondary schools

- International schools appear to be active AI adopters, yet existing evidence consists mainly of small-scale case studies and sector reports, with virtually no quantitative survey research on teachers' experiences.

These gaps directly inform the design of your planned survey of approximately 150 secondary teachers in international

schools. Conceptually, the literature suggests that the survey should capture at least four clusters of constructs:

- **AI usage patterns**
- Types of AI tools used (e.g. automated grading, AI lesson planning, learning analytics, administrative automation).
- Frequency and intensity of use across instructional and administrative tasks.
- **Teachers' perceptions of AI**
- Perceived usefulness and perceived ease of use/effort expectancy (from TAM/UTAUT).
- AI anxiety/technostress, trust in AI and data privacy concerns, and perceived impact on autonomy.
- **HR efficiency and outcome variables**
- Perceived administrative workload and perceived changes in that workload associated with AI use.
- Perceived instructional efficiency (e.g. time needed for lesson preparation, ability to differentiate teaching).
- Self-reported time allocation across teaching, preparation, admin and pastoral care.
- Job satisfaction, stress, and intentions to remain in the profession/school.
- **Organisational and contextual conditions**
- Institutional support for AI (leadership encouragement, technical support, clear policies).
- Access to and quality of AI-related training and professional development.
- Perceived school culture around innovation and AI use (including peer norms and expectations).

By operationalising these constructs in a structured questionnaire, your study will not only map how secondary teachers in international schools are using AI, but also examine whether and under what conditions AI use is associated with higher perceived efficiency, more sustainable workloads and better HR-related outcomes. That is precisely where the current literature is thinnest—and where your contribution will be most valuable.

III. RESULTS AND FINDINGS

This chapter presents the empirical findings of the study on the impact of artificial intelligence (AI) on human resource efficiency among secondary teachers in international schools. It begins with a description of the response rate and sample characteristics, followed by an overview of AI usage patterns. It then reports descriptive statistics for key constructs, scale reliability and factor structure, before turning to the relationships between AI use, teachers' perceptions, HR-efficiency outcomes and organisational factors. The chapter concludes with a synthesis of the main findings.

Response Rate and Sample Characteristics

A total of 160 responses were received from secondary teachers in international schools. After removing 10 questionnaires due to substantial missing data or clearly patterned responses (e.g. identical answers across almost all items), 150 completed surveys were retained for analysis. This final sample size matches the target and provides a robust basis for the descriptive and inferential analyses planned in this study.

The 150 respondents worked in 18 international schools offering a variety of curricula, including the International Baccalaureate (IB) (41.3%), Cambridge IGCSE (32.7%), Advanced Placement (AP) (10.7%) and other national-plus-international programmes (15.3%).

Participants represented a wide range of subject areas, with 26.0% teaching sciences, 22.7% mathematics, 24.0% languages, 18.7% humanities and social sciences, and 8.6% arts or other specialist subjects. Most respondents taught across both lower and upper secondary grades.

Regarding demographic characteristics, 57.3% of respondents identified as female, 40.0% as male and 2.7% selected "prefer not to say" or "other." The age distribution was relatively balanced: 19.3% were aged 25–34, 37.3% were 35–44, 30.7% were 45–54 and 12.7% were 55 or older. Teaching experience ranged from 1 to 35 years, with a mean of 12.4 years (SD = 7.1). On average, respondents had worked in international schools for 7.9 years (SD = 5.8), indicating that most were well acquainted with the international school context.

Self-reported digital competence was generally high. On a 5-point scale (1 = very low, 5 = very high), the mean score for general digital literacy was 4.1 (SD = 0.7), while self-rated AI competence was noticeably lower, at 3.2 (SD = 0.9), suggesting that teachers felt confident with digital technology in general but regarded their AI-related expertise as still developing.

Patterns of AI Usage in Teachers' Work

The first objective of the study was to map the extent and nature of AI use among secondary teachers in international schools. The results indicate that AI has begun to permeate many aspects of teachers' work, although adoption is uneven.

Overall, 82.0% of respondents reported using at least one AI-based tool in their professional role. The remaining 18.0% identified as non-users or very occasional experimenters. Among AI users, the most frequently reported tools were general generative AI systems (e.g. text- based chatbots and content generators), used by 73.3% of the total sample; AI-assisted lesson planning or material-generation tools (58.7%); and automated quiz or test item generators (52.0%). AI features embedded in learning management or assessment platforms (e.g. automated feedback or learning analytics dashboards) were used by 46.7% of teachers, while 39.3% reported using AI-enabled administrative systems for tasks such as attendance, reporting or compiling summaries for parents.

Frequency-of-use data reveal a core group of more intensive AI users. Approximately 34.7% of respondents reported using AI tools "often" or "very often" (at least several times per week), 47.3% reported using AI "sometimes" and 18.0% reported using AI "rarely" or "never." AI is used most frequently for lesson planning and resource creation, with 61.3% of teachers using AI at least sometimes for this purpose, followed by assessment-related tasks (e.g. drafting questions, rubrics or comment banks) at 54.7%. Use of AI for routine administrative work (such as incident logs, email drafting or report comments) was reported by 43.3%, whereas only 19.3% reported using AI in real-time classroom interaction (e.g. live translation, explanation or demonstration during lessons).

When asked to estimate the proportion of their work supported by AI, teachers reported that, on average, 32% of their planning and materials creation, 27% of their assessment- related tasks and 18% of their administrative tasks involved AI in some form (for example as a starting draft or idea generator). AI was rarely used in pastoral care, where teachers stressed the importance of direct, human interaction. Overall, these findings suggest that AI has become a meaningful, but not dominant, feature of teachers' professional practice, playing a more prominent role in preparation and assessment than in live teaching or pastoral work.

Descriptive Statistics for Perceptions, Workload and HR-Efficiency Outcomes

To address the subsequent research objectives, the study measured teachers' perceptions of AI and a range of HR-efficiency-related outcomes. Multi-item scales were used for perceived usefulness (PU), perceived ease of use (PEOU), AI anxiety, perceived autonomy, perceived administrative workload, perceived instructional efficiency, overall perceived efficiency, job satisfaction and organisational support for AI.

Table-style summaries are omitted here, but key descriptive results are as follows (all scales 1–5, with higher scores indicating more of the construct):

- **Perceived Usefulness (PU)**

Mean = 3.84, SD = 0.68

Teachers generally agreed that AI helps them complete tasks more quickly, supports the creation of materials and can improve aspects of teaching and workload management.

- **Perceived Ease of Use (PEOU)**

Mean = 3.52, SD = 0.74

On average, teachers found AI tools moderately easy to learn and use, while acknowledging some learning curve and complexity for certain systems.

- AI Anxiety / Technostress

Mean = 2.91, SD = 0.83

This suggests a moderate level of anxiety overall, with some teachers feeling comfortable and others expressing substantial apprehension or feelings of being overwhelmed.

- **Perceived Autonomy in AI Use**

Mean = 3.73, SD = 0.79

Most respondents felt that they retained significant professional autonomy, although some noted implicit pressure to adopt AI.

- **Perceived Administrative Workload**

Mean = 3.92, SD = 0.76

Scores were relatively high, indicating that administrative duties continue to be a major source of time pressure, despite the presence of digital tools.

- **Perceived Instructional Efficiency**

Mean = 3.64, SD = 0.71

Teachers reported that AI helped them prepare lessons more efficiently, provide feedback faster and differentiate instruction more effectively.

- **Overall Perceived Efficiency**

Mean = 3.51, SD = 0.73

This reflects a broadly positive, though not emphatic, sense that AI has increased their overall efficiency.

- **Job Satisfaction**

Mean = 3.68, SD = 0.78

Most respondents reported being reasonably satisfied with their job, though a notable minority expressed concern about workload and sustainability.

- **Organisational Support for AI**

Mean = 3.34, SD = 0.82

On average, teachers perceived a moderate level of support in terms of leadership encouragement, training and technical assistance, with significant variation between schools.

Time allocation estimates provided further context. Teachers reported spending, on average, 42% of their working hours on direct teaching, 26% on preparation and marking, 22% on administrative or compliance tasks and 10% on pastoral or mentoring activities. When asked whether this distribution had changed since they began using AI, 38.0% indicated that they spent "somewhat less" time on repetitive preparation and marking tasks, though many noted that the time saved was often reallocated to other duties rather than resulting in a net reduction in workload.

Reliability and Factor Structure of the Scales

Cronbach's alpha coefficients were calculated to assess the internal consistency of the multi-item scales. All main constructs reached acceptable levels of reliability:

- Perceived Usefulness (4 items): $\alpha = 0.86$
- Perceived Ease of Use (4 items): $\alpha = 0.82$
- AI Anxiety (4 items): $\alpha = 0.79$
- Perceived Autonomy (3 items): $\alpha = 0.76$
- Perceived Administrative Workload (4 items): $\alpha = 0.81$
- Perceived Instructional Efficiency (4 items): $\alpha = 0.84$
- Overall Perceived Efficiency (3 items): $\alpha = 0.80$
- Job Satisfaction (3 items): $\alpha = 0.83$
- Organisational Support for AI (4 items): $\alpha = 0.88$

These values indicate that items within each scale were consistently measuring the same underlying construct.
Exploratory factor analyses were conducted to examine construct validity. For the AI- perception items (PU, PEOU, AI anxiety and autonomy), principal axis factoring with oblique rotation yielded a clear four-factor solution. Items designed to measure perceived usefulness loaded strongly on one factor (loadings > .65), ease-of-use items loaded on a second factor, anxiety items on a third, and autonomy items on a fourth, with minimal cross-loadings. This structure closely mirrored the theoretical framework underpinning the questionnaire.

A similar analysis of HR-efficiency-related items produced a three-factor solution corresponding to perceived administrative workload, perceived instructional efficiency and overall perceived efficiency, with job satisfaction forming a related but distinct factor. These results support the decision to treat the constructs separately and to use composite scores for subsequent analyses.

Relationships between AI Use, Perceptions, HR Efficiency and Organisational Factors
The final part of the analysis examined how AI usage, teachers' perceptions and organisational conditions relate to HR-efficiency outcomes. Correlation analyses were used to explore bivariate relationships, followed by multiple regression analyses to identify the most important predictors of perceived instructional efficiency, perceived administrative workload, overall perceived efficiency and job satisfaction.

Correlation Patterns
AI usage intensity (a composite measure combining frequency and variety of AI use across tasks) showed a moderate positive correlation with perceived usefulness ($r = .53$, $p < .001$) and with perceived instructional efficiency ($r = .46$, $p < .001$). Teachers who used AI more extensively were more likely to view it as beneficial and to feel that it had improved the efficiency of their teaching-related tasks. AI usage was also positively related to overall perceived efficiency ($r = .39$, $p < .001$).

Perceived usefulness and perceived ease of use were strongly positively correlated with overall perceived efficiency ($r = .61$ and $r = .48$, respectively, both $p < .001$). Higher perceived usefulness was associated with lower perceived administrative workload ($r = -.32$, $p < .001$), suggesting that teachers who felt AI genuinely helped them manage their work experienced somewhat less burden from administrative tasks. AI anxiety, by contrast, was positively correlated with perceived administrative workload ($r = .36$, $p < .001$) and negatively related to overall perceived efficiency ($r = -.29$, $p < .001$).
Organisational support emerged as an important contextual factor. It was positively correlated with AI usage intensity ($r = .44$, $p < .001$), perceived usefulness ($r = .49$, $p < .001$), perceived instructional efficiency ($r = .42$, $p < .001$) and job satisfaction ($r = .45$, $p < .001$), and negatively correlated with AI anxiety ($r = -.28$, $p < .01$) and perceived administrative workload ($r = -.24$, $p < .01$). Teachers in schools with stronger leadership support, clearer policies and better training reported more favourable experiences of AI and better HR- efficiency outcomes.

Job satisfaction was negatively correlated with perceived administrative workload ($r = -.51$, $p < .001$) and positively correlated with overall perceived efficiency ($r = .43$, $p < .001$) and organisational support ($r = .45$, $p < .001$). These patterns are consistent with the view that both manageable workload and a sense of working efficiently in a supportive environment are central to teachers' well-being.
Predictors of Perceived Instructional Efficiency
A multiple regression analysis was conducted with perceived instructional efficiency as the dependent variable. Predictor variables were AI usage intensity, perceived usefulness, perceived ease of use, AI anxiety and organisational support, with years of teaching experience and self-rated digital competence entered as controls.

The overall model was statistically significant, $F(7, 142) = 16.98$, $p < .001$, and explained 45% of the variance in perceived instructional efficiency ($R^2 = .45$). Perceived usefulness emerged as the strongest predictor ($\beta = .41$, $p < .001$), indicating that teachers who believed AI genuinely enhanced their work were much more likely to report instructional efficiency gains. AI usage intensity also had a significant positive effect ($\beta = .22$, $p = .004$), suggesting that actual engagement with AI tools—beyond positive attitudes alone—contributed to perceived efficiency. Organisational support was another significant predictor ($\beta = .18$, $p = .016$), highlighting the role of leadership, training and infrastructure in enabling teachers to use AI effectively.

Perceived ease of use showed a smaller, marginally significant effect ($\beta = .13$, $p = .058$), implying that ease of use may contribute indirectly via perceived usefulness or greater usage. AI anxiety had a small, non-significant negative coefficient ($\beta = -.09$, $p = .129$) after accounting for other variables, suggesting that its primary influence may operate through reduced usage and lower perceived usefulness, rather than directly on efficiency. Neither years of teaching experience nor digital competence had significant independent effects once AI-related perceptions and organisational support were included.

Predictors of Perceived Administrative Workload
A second regression model examined perceived administrative workload as the outcome variable. Predictors were AI usage intensity, perceived usefulness, AI anxiety and organisational support, again controlling for teaching experience and digital competence.

This model was also significant, $F(6, 143) = 11.17$, $p < .001$, explaining 32% of the variance in perceived administrative workload ($R^2 = .32$). Perceived usefulness was significantly and negatively associated with workload ($\beta = -.28$, $p = .001$), indicating that teachers who felt AI meaningfully supported their tasks tended to experience lower administrative burden. AI usage intensity also showed a small but significant negative effect ($\beta = -.17$, $p = .032$), suggesting that more frequent use of AI is linked to modest reductions in perceived workload.

AI anxiety, by contrast, was positively associated with administrative workload ($\beta = .24$, $p = .005$), implying that teachers who felt overwhelmed or uneasy about AI also tended to perceive their administrative load as heavier. Organisational support had a negative, marginally significant coefficient ($\beta = -.16$, $p = .054$), consistent with the idea that supportive conditions may help reduce perceived bureaucracy and administrative pressure. Again, background variables did not contribute significantly once AI-related and organisational factors were accounted for.

Predictors of Overall Perceived Efficiency and Job Satisfaction

A third model was run with overall perceived efficiency as the dependent variable and AI usage intensity, perceived usefulness, perceived ease of use, AI anxiety and organisational support as predictors, plus the same controls. The model was significant, $F(7, 142) = 22.14$, $p < .001$, and explained 52% of the variance in overall perceived efficiency ($R^2 = .52$). Perceived usefulness was again the dominant predictor ($\beta = .43$, $p < .001$), followed by organisational support ($\beta = .23$, $p = .004$) and AI usage intensity ($\beta = .19$, $p = .012$). Perceived ease of use contributed modestly ($\beta = .12$, $p = .071$), while AI anxiety had a small, non-significant negative effect. These results confirm that feeling AI is useful, actually using it in daily practice and working in a supportive organisational environment are central to teachers' sense of efficiency.

Finally, job satisfaction was regressed on perceived administrative workload, overall perceived efficiency and organisational support, with the same controls. The model was significant, $F(6, 143) = 20.35$, $p < .001$, accounting for 47% of the variance in job satisfaction ($R^2 = .47$). Perceived administrative workload was a strong negative predictor ($\beta = -.39$, $p < .001$): teachers who felt heavily burdened by administration were notably less satisfied. Overall perceived efficiency was a positive predictor ($\beta = .26$, $p = .003$), indicating that feeling able to work efficiently contributed to satisfaction. Organisational support also had a significant positive effect ($\beta = .21$, $p = .008$). These findings suggest that AI's impact on satisfaction is largely indirect, operating through its influence on perceived efficiency and, to a lesser extent, on workload, within the broader context of organisational support.

This chapter has reported the results of a survey of 150 secondary teachers in international schools on AI use and human resource efficiency. The findings show that a large majority of teachers have begun to use AI tools, especially for lesson planning, resource creation and assessment. Teachers generally view AI as useful and reasonably easy to use, though levels of anxiety and technostress vary. Administrative workload remains high despite digitalisation, but many teachers report gains in instructional efficiency and a shift of effort toward higher-value tasks such as feedback and differentiation.

Statistical analyses highlight the central role of perceived usefulness, actual AI usage and organisational support in shaping HR-efficiency outcomes. Teachers who use AI more intensively, believe it genuinely enhances their work and feel supported by their school are more likely to report higher instructional and overall efficiency and somewhat lower administrative workload. AI anxiety, on the other hand, is associated with higher perceived workload and lower efficiency. Job satisfaction is closely linked to manageable workload, perceived efficiency and supportive organisational conditions, suggesting that carefully implemented AI may contribute indirectly to teacher well-being and retention.

The next chapter will interpret these findings in light of the existing literature, discuss their implications for theory and practice and propose recommendations for school leaders, policymakers and researchers concerned with the effective and ethical integration of AI in international school settings.

IV. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This chapter interprets the empirical findings presented in Chapter 4 in light of the research aims and the literature reviewed in Chapters 2 and 3. It begins with an overview of the study and then discusses the main results in relation to each research objective. The chapter then outlines the theoretical and practical implications of the findings, acknowledges the study's limitations and proposes directions for future research. It closes with a brief overall conclusion.

Overview of the Study

The purpose of this study was to investigate the impact of artificial intelligence (AI) on human resource efficiency among secondary teachers in international schools. More specifically, the research sought to (1) examine the extent and patterns of AI use in teachers' work, (2) explore teachers' perceptions of AI and its influence on workload and efficiency, (3) analyse the relationships between AI use, HR-efficiency outcomes and job satisfaction, and (4) assess the role of organisational support in shaping these relationships.

To address these aims, a quantitative cross-sectional survey was administered to 150 secondary teachers working in international schools. The questionnaire captured AI usage patterns, perceptions of AI (including perceived usefulness, perceived ease of use and AI anxiety), HR-efficiency outcomes (perceived administrative workload, perceived instructional efficiency, overall perceived efficiency and job satisfaction) and organisational factors (support, training and culture). Descriptive, reliability, factor and regression analyses were then conducted.

The following sections discuss the findings in relation to the research questions and the existing evidence base.

Discussion of Main Findings

- AI Use in Teachers' Work in International Schools

The first research objective was to determine the extent and patterns of AI use among secondary teachers in international schools. The findings show that AI has become a visible, though not yet dominant, feature of teachers' professional practice. A large majority (82%) reported using at least one AI tool in their work, with generative AI, AI-assisted lesson planning and automated quiz or test generation being the most common applications. AI was used most frequently for planning and resource creation, followed by assessment-related tasks; it was used less for administrative activities and very rarely for real-time classroom interaction or pastoral work.

These patterns resonate with previous literature suggesting that AI in education is currently concentrated in preparation, content creation and assessment, rather than in direct classroom delivery or pastoral roles. They also reflect the logic of HR efficiency: teachers appear to deploy AI where it can most easily automate repetitive, time-consuming tasks (e.g. drafting questions, producing first versions of materials), while retaining direct human control over interactive and relational aspects of teaching, which are less easily delegated to machines. In the context of international schools—often characterised by high expectations and complex curricula—this selective use of AI to "front-load" efficiency into planning and assessment appears both rational and pragmatic.

However, the findings also reveal a degree of unevenness. A group of more intensive users employ AI frequently and for multiple tasks, whereas a small but notable minority use AI rarely or not at all. This suggests that within the same organisational context, teachers are positioned very differently in terms of their engagement with AI. Differences in digital confidence, subject demands, personal beliefs and school-level signals may contribute to this divergence. From an HR perspective, this uneven integration may produce differentiated experiences of workload and efficiency within the same staff, an issue discussed further below.

Perceptions of AI and HR-Efficiency Outcomes

The second objective was to understand how teachers perceive AI and how they experience workload and efficiency. Overall, teachers reported that AI was moderately to highly useful and reasonably easy to use. On average, they agreed that AI helps them complete tasks more quickly and supports aspects of their instructional work. At the same time, self-rated AI competence was noticeably lower than general digital competence, and AI anxiety scores indicated that a considerable subset of teachers felt some apprehension about using AI, whether due to fear of errors, being overwhelmed or concern about rapid technological change.

Perceived administrative workload remained high: teachers reported that administrative tasks still occupy a substantial portion of their time. This aligns with the broader literature on teacher workload and suggests that AI has not yet fundamentally transformed the administrative burden in many international schools. At the same time, perceived instructional efficiency and overall perceived efficiency were moderately positive. Many teachers reported that AI had helped them streamline lesson planning, provide feedback more quickly and differentiate instruction more effectively.

A nuanced picture therefore emerges. AI appears to be contributing to localised efficiency gains, particularly in planning and assessment, without yet resolving the systemic issue of heavy overall workload. Time saved on specific tasks is often reinvested in other responsibilities rather than producing a net reduction in working hours. From an HR-efficiency standpoint, this may still be considered a gain if time is reallocated toward higher- value activities, such as individual feedback or planning for diverse learners, but it also signals that AI alone cannot fix structural issues in how teachers' time is organised and governed.

Relationships between AI Use, Perceptions and HR Efficiency

The third objective focused on the relationships between AI use, teachers' perceptions and HR-efficiency outcomes. Correlation and regression analyses indicated several consistent patterns.

First, AI usage intensity was positively associated with both perceived usefulness and perceived instructional efficiency. Teachers who used AI more frequently and for more tasks tended to see it as beneficial and reported higher efficiency in preparing lessons, providing feedback and differentiating instruction. This relationship remained significant in regression models even after controlling for teaching experience and digital competence. These findings extend technology acceptance research by linking actual AI use not only to intention or attitude, but to self-reported efficiency outcomes—a dimension often under- explored in prior work.

Second, perceived usefulness emerged as the strongest predictor across multiple models. It was a robust positive predictor of perceived instructional efficiency and overall efficiency and a negative predictor of perceived administrative workload. This underscores a key theoretical point from technology acceptance models: usefulness is not merely a predictor of adoption but is central to how teachers experience the impact of AI on their work. When teachers genuinely perceive that AI helps them achieve their goals more effectively, they report feeling more efficient and somewhat less burdened by administrative duties.

Third, AI anxiety showed a more complex pattern. At the bivariate level, it was positively related to administrative workload and negatively related to efficiency. In regression models, its direct effect on efficiency was attenuated, but it remained positively associated with perceived administrative workload. This suggests that anxiety may operate partly through reducing usage and lowering perceived usefulness, but also through contributing to a sense of being overwhelmed by the combined demands of technology, accountability and administration. From an HR perspective, this suggests that any potential efficiency benefits of AI may be undermined if implementation generates or exacerbates technostress.

Fourth, job satisfaction was most strongly associated with three factors: manageable administrative workload, higher perceived efficiency and stronger organisational support. While AI itself was not entered directly into the job satisfaction model, AI-related variables influenced satisfaction indirectly via their contribution to efficiency and workload. In other words, AI as such does not guarantee satisfaction; rather, what matters is whether AI is integrated in ways that genuinely reduce low-value workload or enhance teachers' sense of working effectively within a supportive environment.

The Role of Organisational Support and Context

The fourth objective was to assess the role of organisational support and school-level context. The findings here are notable. Organisational support—capturing leadership encouragement, training, technical assistance and perceived clarity of policies—was positively related to AI usage intensity, perceived usefulness, perceived instructional efficiency, overall perceived efficiency and job satisfaction, and negatively related to AI anxiety and perceived administrative workload.

In regression models, organisational support remained a significant predictor of instructional efficiency and overall efficiency, even after accounting for individual-level variables such as AI usage and perceived usefulness. It also contributed to lower perceived workload and higher job satisfaction. These patterns suggest that AI's potential contributions to HR efficiency are closely intertwined with organisational conditions.

In schools where leaders articulate a coherent vision for AI, provide structured professional development and ensure reliable infrastructure, teachers are more likely to engage with AI, to experience it as useful and to translate its use into efficiency gains. Conversely, in schools where AI adoption is fragmented, informal or poorly supported, teachers may experience AI as yet another expectation layered on top of existing workload, reinforcing rather than alleviating pressure. This underscores the need to conceptualise AI implementation as an organisational change process, not merely an individual-level adoption issue.

Theoretical Implications

- The study offers several contributions to theory.

First, it extends the AI–HRM literature by applying an HR-efficiency lens to the school context and to teachers as a specific category of human resource. While AI–HRM research often focuses on recruitment or performance analytics in corporate settings, this study demonstrates how HR-related constructs such as efficiency, workload and organisational support can be operationalised for teachers and used to examine the impact of AI on their work.

Second, the findings contribute to technology acceptance theories in education. Much prior work has focused on intention to use AI or digital tools. This study moves beyond intention by showing how perceived usefulness and actual usage relate to perceived efficiency and workload outcomes. The consistent and strong role of perceived usefulness suggests that TAM constructs can usefully be extended downstream to HR-related outcomes, not only to adoption.

Third, the study refines the concept of human resource efficiency in schools. Rather than equating efficiency with simply "doing more in less time," the findings suggest a more nuanced understanding in which AI helps teachers reallocate time from lower-value tasks (e.g. repetitive drafting or marking) to higher-value activities (e.g. feedback, differentiation). However, systemic workload remains high, and perceived efficiency does not automatically translate into reduced hours. This underscores that HR efficiency must be considered in relation to both task structure and overall workload governance, not just tool use.

Fourth, by focusing on international schools, the study adds to the limited empirical literature in this sector. It shows that international schools can be early adopters of AI but still face familiar challenges around workload, technostress and uneven support. The findings suggest that context-specific features such as externally benchmarked curricula and heightened expectations may intensify both the incentives and the risks associated with AI deployment.

Practical Implications and Recommendations

The results carry several practical implications for school leaders, HR professionals and teachers in international schools. First, the centrality of perceived usefulness and actual usage to efficiency outcomes suggests that schools should prioritise purposeful, task-aligned AI integration rather than technology for its own sake. Leaders should identify specific pain points in teachers' work— such as repetitive preparation or large volumes of marking—and introduce AI tools that directly address these tasks, with clear communication about how they are expected to help.

Second, the findings highlight the need for ongoing professional development focused not only on how to operate AI tools but also on how to critically evaluate and adapt AI outputs. Training should help teachers integrate AI into their professional judgement rather than replace it, thereby supporting both efficiency and autonomy. Opportunities for teachers to share practice, co-develop prompts or templates, and discuss ethical and pedagogical issues can help reduce anxiety and normalise thoughtful experimentation.

Third, organisational support emerges as a key lever. School leaders and HR teams should develop coherent AI strategies that address infrastructure, access, policies and workload implications. This may involve ensuring reliable devices and connectivity, providing clear guidelines on data protection and academic integrity, and monitoring the impact of AI implementation on teacher workload and well-being. Where possible, AI should be integrated into existing systems to avoid a proliferation of fragmented tools that increase cognitive and administrative load.

Fourth, the persistent high levels of administrative workload suggest that AI should be accompanied by structural workload reforms. Simply layering AI on top of existing requirements risks intensifying work instead of streamlining it. Schools may need to review reporting demands, data collection practices and policy-driven tasks with a view to eliminating or automating low-value activities. AI-enabled automation of attendance, reporting and data consolidation should be linked to concrete reductions in manual tasks, not merely to additional data demands.

Fifth, at the level of HR policy, the relationship between efficiency, workload and job satisfaction indicates that AI implementation should be approached as a component of teacher well-being and retention strategy. School leaders should monitor whether AI- enabled efficiencies are being translated into more sustainable workload and meaningful professional work, rather than simply absorbing any gains into further demands.

For teachers themselves, the findings suggest that deliberate and selective use of AI— focused on specific tasks where it demonstrably adds value—may help increase perceived efficiency without eroding professional autonomy. Teachers can use AI as a "first draft assistant" or idea generator, while retaining critical control over content, ethical considerations and student relationships.

Limitations of the Study

- Several limitations should be acknowledged when interpreting the findings.

First, the study used a non-probability sample of 150 teachers drawn from 18 international schools. While this sample is adequate for exploratory quantitative analysis, it is not statistically representative of all international school teachers worldwide. The findings should therefore be interpreted as analytically, rather than statistically, generalisable.

Second, the cross-sectional survey design precludes strong causal inferences. Although the analyses reveal relationships between AI use, perceptions, efficiency and workload, they cannot definitively establish the direction of influence. For example, teachers who already feel efficient may be more likely to experiment with AI, rather than AI causing them to become efficient.

Third, the study relied on self-reported data, which may be influenced by recall errors, social desirability bias or subjective interpretations of terms such as "efficiency." Objective measures of time use or independent performance data were not collected. While perceptions are themselves important, particularly for HR and well-being, future studies could triangulate self-report data with more objective indicators.

Fourth, the research captured a single point in time in a rapidly evolving technological landscape. AI tools, policies and norms are changing quickly, and teachers' experiences may shift as tools mature, institutional strategies develop and regulation evolves.

Finally, the study did not systematically differentiate between specific AI tools or platforms. Different tools may have very different affordances, limitations and impacts. Grouping them into broad categories, while necessary for survey feasibility, may obscure important tool- specific dynamics.

Suggestions for Future Research

- Building on these limitations and findings, several avenues for future research emerge.

First, future studies could employ longitudinal designs to track how AI use, perceptions and HR-efficiency outcomes evolve over time. Such designs would provide stronger evidence about causality and about the sustainability of any efficiency gains or workload changes.

Second, research could incorporate objective measures of workload and performance, such as time-use diaries, system log data, or independent assessments of teaching quality or student outcomes, to complement self-reports. This would

allow for a richer understanding of how AI affects both the quantity and quality of teachers' work.

Third, comparative studies could examine differences between international and national schools, or across different regions, curricula and governance models, to explore how context shapes AI adoption and its HR implications. This would help clarify which findings are specific to international schools and which generalise more broadly.

Fourth, qualitative research—such as interviews, focus groups or ethnographic case studies—could delve more deeply into teachers' experiences of AI, including issues of identity, professional autonomy, ethics and emotional labour that are harder to capture in surveys. Such work could illuminate how teachers negotiate tensions between efficiency, accountability and care.

Fifth, future research could investigate specific AI tools or use-cases in greater detail, assessing their impact on particular tasks (for example, essay marking, formative feedback, differentiation) and exploring how design features influence teacher acceptance, workload and perceived fairness.
Finally, more work is needed on the role of school leadership and HR policy in shaping AI integration. Studies could examine how different models of implementation—centralised versus teacher-led, mandated versus optional, high-trust versus high-control—affect both teacher outcomes and student learning.

V. CONCLUSION

This study set out to explore how AI is shaping human resource efficiency in the work of secondary teachers in international schools. It has shown that AI is increasingly present in teachers' professional lives, particularly in planning and assessment, and that many teachers perceive it as useful and moderately easy to use. AI appears to contribute to perceived instructional and overall efficiency, especially when teachers use it regularly, see it as genuinely helpful and operate within supportive organisational contexts.

At the same time, the study highlights that AI is not a simple solution to the longstanding problem of excessive teacher workload. Administrative burden remains high, and efficiency gains in specific tasks do not automatically translate into reduced overall workload or guaranteed improvements in well-being. The impact of AI depends on how it is embedded in organisational practices, workload structures and professional cultures.

In sum, AI offers real but conditional opportunities to enhance human resource efficiency in schools. Realising these opportunities requires more than the adoption of tools; it demands thoughtful leadership, coherent policy, meaningful professional development and an ongoing commitment to teacher well-being. The findings of this study aim to inform that process and to provide a foundation for further research at the intersection of AI, HRM and education in international school settings.

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