Proceedings of ICFTBA 2025 Symposium: Strategic Human Capital Management in the Era of AI
DOI: 10.54254/2754-1169/2025.LD30162

Leading Through Algorithms: A Case Study of AI-Mediated Leadership in an International Educational Organization

Junan Chen

The University of Hong Kong, Hong Kong, China
jaychen010224@gmail.com

Abstract. This paper investigates how generative artificial intelligence (GenAI) reconfigures school leadership practices in a bilingual international high school in Sichuan, China. Drawing on a semiotic-ethnographic framework, it analyses six quasi-official documents—including meeting handouts, workshop plans, and parental communications—produced through Notion AI and ChatGPT between March and October 2025. Rather than viewing AI as a neutral tool, the study frames it as a semiotic actor that participates in the production of authority and legitimacy. Findings show that administrative writing becomes algorithmic editing, where leadership involves curating and contextualizing machine output. AI-mediated communication redistributes accountability, blurs authorship, and amplifies digital inequities among staff. The analysis highlights leadership as translational work across human and algorithmic logic, proposing "algorithmic leadership" as a new literacy of governance within post-digital educational institutions.

Keywords: Generative AI, Educational Leadership, Algorithmic Mediation, International Education

1. Introduction: leading through algorithms in everyday school life

Generative artificial intelligence (AI) has revolutionized the everyday practice of school leadership. AI tools ChatGPT and Notion AI are now assisting management writing reports, preparing handouts, and organizing peer-to-peer communications. At international schools, as many staff have diverse backgrounds, English functions as a working lingua franca. Therefore these systems help building efficiency in L2 professional settings, but also raise questions about authorship, judgment, and legitimacy. Although the educational application of AI is widespread throughout teaching, little attention has been given around how it restructures leadership itself: how decisions are captured through documentation, where authoritative voices are articulated; and how value is measured when machine-generated texts become forms of institutional speech.

This study explores leadership influenced by Generative AI (GenAI) in an international high school setting in Chengdu, China. It examines six quasi-official documents (agendas for meetings, outlines for workshops, and texts documenting parent communication) produced by a young digital-native leader applying AI tools from March to October 2025. These artifacts offer small yet significant instances of how administrative and communicative labour is redistributed between the

DOI: 10.54254/2754-1169/2025.LD30162

human and AI. Instead of considering AI to be a neutral tool, the study reads AI as a semiotic actor which is involved in construction, policing and administration of meaning [1].

Based on the analysis, leadership has developed as a translation practice between human and AI logic. In administrative writing, AI standardizes tone and structure but downplay individuality; in student management, it mediates judgment and accountability; and in staff coordination, it creates new inequalities of technological proficiency. In all of these areas, the leader curates, edits, and legitimizes AI-generated results within human environments. Considering these dynamics, the paper suggests that the new duty for educational leadership is to preserve human coherence by automating the demonstration of consistency and voice. The "algorithmic leader" not only gives power to data but continually negotiates between efficiency and empathy, automation and accountability. By foregrounding such a relationship, we help to imagine equitable and ethical leadership in the AI-mediated school management.

2. Methodology: empirical, discursive, and multi-modal analysis

2.1. Research design and context

This study uses a semiotic-ethnographic approach [2,3] to investigate the restructuring of leadership practice occurring in a human–AI hybrid school environment. The research site is an international high school in Sichuan, China, where English-medium instruction, a range of faculty backgrounds, and rapid adoption of generative AI tools have made algorithmic mediation a daily reality. The empirical focus is on how administrative, student-facing and managerial texts—produced through or alongside AI systems—embody new forms of authority, efficiency, and legitimacy. The project thus does not consider AI as a tool but rather a semiotic actor [1] that produces a duality between meaning and institutional governance.

2.2. Data collection

Sample data were gathered from March to October 2025 in school-related artifacts and official texts. In those texts, AI was overtly influencing decision making or document-creation. Inside the school's digital ecosystem, Notion—a note-taking application — serves as the hub where planning, documentation, and communication occur within the school. All six analyzed pages were put together in this application and circulated in a style that included text, visuals, and hyperlinks associated, sometimes with AI-enhanced document organization.

The author of these materials was a 32-year-old international division head, whose main role was to coordinate staff and academic communication to students. Known for his technological fluency, the leader often used Notion AI and ChatGPT to compose, format, or distill contents. These Notion pages, then, express a mode of authorship that's unique in that managerial demands, administrative voice, and AI assistance converge—indicating how AI agency is increasingly becoming an essential part of the semiotic practices in bilingual school settings.

Three main datasets were analyzed:

1. Administrative artifacts — AI-generated meeting handouts, workshop plans, and institutional reports (e.g., AI Empowerment Workshop, Personalized Teaching Seminar).

2. Disciplinary and management records — digital dashboards and written reflections showing algorithmic participation in student behaviour monitoring and staff evaluation.

3. Staff communication and reflective writing — Notion pages, teacher feedback, and leadership notes illustrating human-AI interaction in daily coordination.

DOI: 10.54254/2754-1169/2025.LD30162

Table 1. School-related artifacts and official texts

Document Title	Date / Period	Primary Function	AI Involvement	Relevance to Leadership
AI Empowerment Workshop Plan	March 2025	School-wide professional development agenda introducing AI tools to staff.	Drafted using Notion AI and ChatGPT, with citations auto-generated by AI search assistant (Perplexity).	Shows leadership constructing legitimacy through AI-authored discourse.
Personalized Teaching Seminar	May 2025	Internal research-sharing handout and session plan.	AI-assisted structuring of bullet points, emoji status markers, and bilingual formatting.	Reflects administrative efficiency and the loss of individual authorial voice.
Parent Salon Agenda (Grade 8)	June 2025	Event script and discussion guide for parent engagement.	Content outline and participant list organised in Notion using AI template.	Reveals AI mediation in public-facing relational leadership.
Teaching Research Forum (Century Theatre)	September 2025	Public teaching-research showcase for all departments.	AI-generated presentation outline and slogans	Shows algorithmic participation in vision-making and legitimacy performance.
Engage Mixed Report	October 2025	Lesson-research report documenting mixed-ability teaching practices.	Edited and formatted using Notion AI; includes AI-generated tables and reflections.	Highlights daily operational automation and shifting accountability practices.
Club Approval Announcement	October 2025	Bilingual formal notice approving a student club and outlining responsibilities.	Drafted in bilingual format using ChatGPT for translation and tone calibration, edited manually	Demonstrates how AI supports institutional legitimacy, politeness, and affective tone in official correspondence.

All documents were archived in their original multimodal formats (text, layout, icons, hyperlinks, and screenshots) to preserve communicative context.

2.3. Analytic framework

The analysis brings together empirical documentation, discourse analysis, and multi-modal semiotic analysis:

• Empirical layer: Highlights leadership practices mediated by AI – such as automated agenda drafting, behavioral prediction, or Notion-based management on workflows. Use, change, and assignment patterns were documented to demonstrate how administrative authority is redistributed between human and GenAI agents.

• Discursive layer: Uses critical discourse analysis [4] to explain the linguistic and rhetorical characteristics of AI-generated texts. This means tracking the ways that leadership voice, tone, and stance are re-contextualized by GenAI templates—how "efficiency," "innovation," or "professionalism" is linguistically acted out.

• Multi-modal layer: Based on multi-modal discourse analysis [5], it analyses the visual and material design of institutional documents—of emoji use, typographic regularity, hyperlink embedding, bilingual formatting—as signals of algorithmic authorship and institutional ideology. This layer captures whether AI participation becomes visible (or concealed) in document aesthetics.

DOI: 10.54254/2754-1169/2025.LD30162

2.4. Reflexivity and researcher position

The author conducted this research while on an academic internship at the participating international high school. This role gave access to internal meetings, digital workspace, and institutional artifacts. However, it helps maintain analytical distance from the school leadership hierarchy. The researcher also observed how AI tools were integrated into daily routines, occasionally assisting with documentation and professional-development activities.

This position of active participant and outsider facilitated a close observation of how AI technologies were involved in daily operation, and how it is interpreted by the leadership team, while also requiring ongoing reflexivity about bias and authority. No identifying data were collected. Instead, attention was given to how access, familiarity, and time constraints shaped interpretation. Thus, the analysis considers leadership as situated knowledge [6], produced through calibration within a dynamic, technologically mediated educational organization.

3. Analysis: algorithmic mediation in everyday leadership

The analysis examines the six AI-mediated documents completed by the leadership team of the school from March to October 2025. They are selected, in part because these artifacts — from plans of a staff workshop to communication materials to parents — are particularly representative to daily communications that took place in the campus. This ensures that each document is a locus of action [3]. It links managerial intention, GenAI output and social interpretation. Instead of looking at the texts in isolation, the analysis follows the documents materializing leadership practices across three related aspects: administration, student management and staff coordination.

3.1. From strategic vision to everyday administrative automation

For instance, GenAI has served as the backbone for slogans and policy papers to infiltrate the school management micro-practices. The leader makes use of AI tools (e.g., large language models) to produce weekly meeting hand-outs, teaching-research briefs and event outlines. Looking into institutional artifacts—“Engage Mixed” report and “Teaching Seminar” document—we can extract clear mode and genre of the text: repeated sub-headings, logic in bullet-point entries, bilingual alignment, formatting consistency.

DOI: 10.54254/2754-1169/2025.LD30162

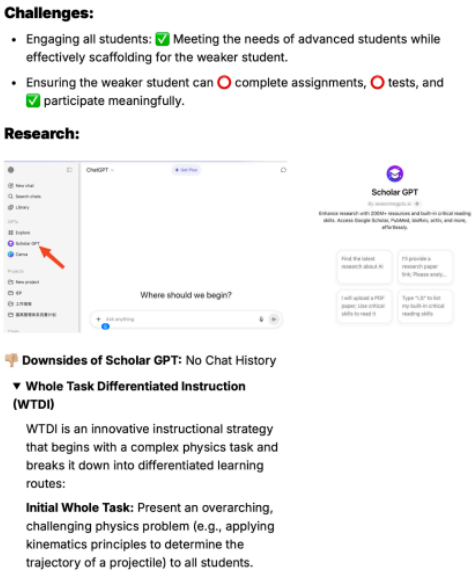

Figure 1. Excerpt from “engage mixed report” repeated sub-headings, bullet-point logic, and uniform formatting are common in document created by GenAI

This transition exposes a re-conceptualization of leadership labour: rather than generating and summarizing content, the leader curates prompts, edits machine output, and decides what counts as final. In short, leadership is a kind of algorithmic editing—a human authoring meaning made through selection, trimming, and contextualization of AI-generated text. The productivity increases are real (minutes rather than hours), but the price is voice homogenization and institutional prose comes off as standardized rather than personalized, flattening personal leadership impression [7]. More and more leaders adopt computational techniques of decision making and management [7,8]. In this school, automation supports management but also frames institutional representation.

The “Teaching Research Forum” document includes AI-generated phrases such as “Research Essence · Co-creating the Future” and an intentionally laid out layout more like corporate communication than educational discourse. But in the same file, a discussion led by the leader – also demonstrates awareness of the author’s awareness that AI cannot mimic all forms of thought production and requires human calibration. The intermingling of polished, machine-optimized prose and the tactile, personal note performs a subtle multi-modal dance, imagining the leader as both efficient and authentic, mixing the tech and emotion.

DOI: 10.54254/2754-1169/2025.LD30162

Table 2. Excerpt from “teacher training forum ” features an AI-generated phrasing as tagline as well as a handwritten sticker

9/26 Teaching Research Sharing Session (Century Theatre)
"Refining Teaching Research · Co-creating the Future"
September 26, 2025, 16:40-17:40 (Total 60 minutes), Century Theatre
Topic: How to Achieve Short, Medium, and Long-term Training Goals for Students in International High School? Format: Sharing by the International Department Management Team in Sections
Discussion: • The current situation of 4 students and their academic performance in junior high school. • Language Teaching → Teaching Research → Effective Teaching; SAT → Teaching Research → Effective Teaching; Also, AI and personalized education. • Confidence in everyone.

Through this combination, AI and handwriting co-produce the school’s public image. The leader’s strategic vision is no longer expressed only in policy or speech but in the texture of documents that merge digital automation with embodied expression. However, this hybridity also reproduces a paradox of control: the leader gains speed and coherence through AI, while still asserting individuality through manual writing. Everyday administrative automation thus re-codes leadership as an act of curation—managing not just people and plans but the semiotic balance between AI and human voices.

3.2. Algorithmic mediation in student management and discipline

The implementation of a system to manage students’ discipline requires both AI assistance and human judgement. Leaders are increasingly relying on AI-produced dashboards, automated attendance trackers, and communications to identify behavioral risks. While these tools provide real-time data and templated messaging that saves time and increases productivity, it is up to the leaders to interpret and contextualize the machine’s production with a human touch, acting as mediators between algorithm and actor.

In this school, the hybrid approach is already evident in data-led oversight and communication with students. For example, the Club Approval Announcement—a bilingual message that formally approves the formation of a club by a student—was written using ChatGPT for calibrating tones and translation, before being manually edited by the division head.

“We hope you will work closely with your advisors to carry out the activities and goals outlined in your proposal… With your joint efforts, the club is sure to thrive and achieve its goals.”

“Please note that the Director of the International High School Division reserves the right to terminate the club if any of the following occurs: low attendance persists despite reminders; advisors fail to fulfill their duties; or activities deviate significantly from the approved proposal.”

(Club Approval Announcement, 2025; with Chinese also included as in-line translations)

These paired excerpts reveal the hybrid tone characteristics of AI-mediated leadership writing: institutionally standardized yet affectively modulated. The parallel structure and precise conditional phrasing (“if any of the following occurs…”) suggest AI-assisted drafting—efficient, procedural, and consistent tones across the whole message. At the same time, the inclusion of personalized encouragement and bilingual phrasing infuses warmth. Thus the message would be without overstating control or underplaying authority . This exemplifies how AI-mediated judgment operates across the school—mechanically structured yet humanly justified. Through such texts, leadership

DOI: 10.54254/2754-1169/2025.LD30162

discourse creates legitimacy using a "mediated" version of the administrative language - showing how generative AI supports the dual function of school communication: to regulate and to reassure, to maintain order while sustaining the appearance of personal connection.

However, through observations during the research practices as above generate several tensions. The first is information and communication overload. As dashboards and AI drafting tools multiply outputs—attendance alerts, performance summaries, standardized emails—the leader's task becomes filtering, editing, and contextualizing rather than composing [9]. Greater efficiency makes more information visible, but it also narrows the space for reflection and essentially deprives thinking and making drafts proactively. Leadership begins to feel less like deliberate judgment and more like responding to an endless stream of prompts and approvals - this would, as stated by the leader, potentially "blind" the vision to detect and oversee details in daily operations.

A second tension involves accountability and delegation. When an AI-generated or AI-flagged decision leads to action—such as a disciplinary warning or official approval—responsibility becomes blurred. The system may have framed the message, yet the leader authorizes it. This dynamic produces what calls algorithmic scapegoating [10]: the diffusion and re-direction of responsibility across human and machine actors, leading mistakes or omissions to appear as system errors rather than human mishaps.

A clear example occurred when a student was disciplined for violating a rule that the principal believed had been clearly stated in the club approval letter. In reality, that very rule had not appeared in the version of the document; it existed only in an earlier AI-generated draft that the leader assumed that he had been included. The confusion arose because several versions of the same text had been produced and revised through AI at different times. This created confusion among both staff and students about which of the policy papers are actually legitimate. The case illustrates how automation, meant to improve efficiency, can unintentionally generate administrative frictions and weaken accountability when leaders over-rely machine-generated texts, albeit with best of intentions.

A third issue concerns equity and bias. AI systems trained on historical conversations may reproduce cultural or linguistic asymmetries [11]. In international schools, communication operates across languages and norms. Therefore, such bias can manifest subtly through tone, word choice, or omission. The bilingual approval letter itself highlights this risk—the English segment, generated by AI, positioned the student as an empowered "president," while the Chinese version retained a more conservative tone, within a large hierarchical order.

Ultimately, the leader's role is not replaced but redefined. The leader decides which AI prompts to trust, how to balance formal authority with empathy, and how to explain such reasoning to students, teachers, and parents.

3.3. Efficiency, equity, and the new burden of proficiency

The push to harness AI and digital tools has introduced a new burden of technological proficiency that disproportionately affects longer-serving staff. The prolonged daily observation in the slow permeation process of GenAI implies younger teachers (who had grown up with the digital world) adapted quickly, while older teachers struggle to keep pace — causing a gap in speed, efficiency and perceived productivity. Older colleagues report spending far more time "filling out forms, generating results and inputting data" than their younger counterparts, yet their additional effort is not matched by outcome visibility from management's perspective. Therefore, they are likely to be labeled as "digitally uncanny or "having a working style that is a bit backwards", as once commented by the leader.

DOI: 10.54254/2754-1169/2025.LD30162

From a leadership viewpoint, two tensions emerge. First, efficiency is framed as a universal gain — AI and digital tools should save time, reduce repetition, and free up resources for richer pedagogical work [12]. However, the reality is uneven: the efficiency gains from AI-assistance accrue only to the "fast adopters", while others, especially older teachers, carry a heavier load even to learn and adapt to the new technology. Second, equity becomes compromised—not a resource deprivation, but a competence divide. AI in schools tends to amplify rather than close such divides — teachers with greater access to training, stronger digital literacy and institutional support benefit more than those who stick to the paper and pen [13].

Moreover, this dynamic creates a discrepancy in effort vs. outcome, especially what was perceived by the leadership. Some teachers' contributions appear enhanced (via fast-produced AI templates), yet the leadership often fails to recognize the underlying need to train those early adopters the key pedagogical skill to prompt-engineering, editing and contextualising AI output instead of using them without selection. Conversely, teachers who resist using AI may produce fewer outputs, but their work is less visible. Leadership may interpret this as 'lower productivity', although the grounds of rejecting technology are likely to be ethical. Thus, the leadership risk is two-fold: (a) punishing slower adopters under the disguise of "inefficiency" and (b) over-valuing AI-enabled output without adequate scrutiny and checks for pedagogical validity.

In effect, the leader must acknowledge that digital fluency is uneven, structuring workflows so that older teachers are supported in the way that manual work should still be considered legitimate. Leadership must ensure that efficiency gains do not translate into new inequities of workload or recognition. Evaluation should not only depend on what tools are used but who is able to use them effectively, how workload is distributed, and how quality is maintained when output is accelerated by AI. Without professional development, differentiated job-design and recognition of such 'invisible labour', schools risk creating a new hierarchical ordering of "AI-fluent" vs. "AI-marginalized" staff — undermining equity, morale and ultimately legitimacy not only in teacher's offices, but also in classrooms.

4. Conclusion

Across the three cases examined, the AI-mediated leadership within the international high school emerges not as a pure technological skill but as a reflexive mode of mediation. The leader no longer acts as a traditional decision-maker, communicator, or evaluator, but as a translator navigating between human governance and algorithm logic. Each case demonstrates an aspect of this translational work. In administrative documents and announcements, AI-generated documentation (3.1) re-configures the symbolic voice of the institution, replacing authorship with standardized Gen-AI style. In student management and discipline (3.2), AI tools redistribute judgment and accountability, producing a hybrid moral economy where errors and decisions could be attributed to human and non-human agents. In staff coordination and professional equity (3.3), AI intensifies existing divides of digital literacy and temporal efficiency, making proficiency itself a new site of legitimacy and inequality.

Taken together, these layers reveal how leadership in an AI-mediated school is less about using technology and more about interpreting what technology produces. The new "algorithmic leader" must constantly negotiate between efficiency and empathy, data and context, automation and interpretation.

At a theoretical level, these observations contribute to the understanding of legitimacy as multi-modal and polycentric [2]. AI tools act as semiotic actors that reshape how legitimacy circulates within the institution: the young, tech-fluent staff who are seen as competent, efficient, as opposed

DOI: 10.54254/2754-1169/2025.LD30162

to the older staff who maintain human agency but are ridiculed as 'slow-to-adapt'. The leader's legitimacy, in turn, is tested not by control over technology but by their ability to mediate across multiple semiotic centers—administrative systems, dashboards, perceived time to finish tasks, staff communication channels, and moral expectations about what counts as "real work."

Ultimately, the "algorithmic leader" occupies an ambiguous but generative position. They are neither fully in command of technology nor entirely subject to it; rather, they perform the ongoing work of translation, ensuring that organizational life remains intelligible amid automation. We could see the international school as a microcosm of the broader post-digital condition: a space where leadership is measured neither by the adaptation nor the suppression of AI, but by the active negotiation between algorithm and humanity through it.

References

[1] Latour, B. (2005). Reassembling the social: An introduction to actor-network theory. Oxford University Press.
[2] Blommaert, J. (2013). Ethnography, superdiversity and linguistic landscapes. Multilingual Matters.
[3] Scollon, R., & Scollon, S. W. (2004). Nexus analysis: Discourse and the emerging internet. Routledge.
[4] Fairclough, N. (2013). Critical discourse analysis: The critical study of language (2nd ed.). Routledge.
[5] Kress, G., & van Leeuwen, T. (2021). Reading images: The grammar of visual design (3rd ed.). Routledge.
[6] Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. Feminist Studies, 14(3), 575–599. https: //doi.org/10.2307/3178066
[7] Walsh, M. (2019). The algorithmic leader: How to be smart when machines are smarter than you. Page Two Books.
[8] Bevilacqua, S., Masárová, J., Perotti, F. A., & Ferraris, A. (2025). Enhancing top managers' leadership with artificial intelligence: Insights from a systematic literature review. Review of Managerial Science. https: //doi.org/10.1007/s11846-025-00836-7
[9] Sposato, M. (2025). Artificial intelligence in educational leadership: A comprehensive taxonomy and future directions. International Journal of Educational Technology in Higher Education, 22(20). https: //doi.org/10.1186/s41239-025-00517-1
[10] Kush, J. C. (2025). Leveraging ChatGPT in K-12 school discipline: Potential and bias. AI in Education Review, 6(7), 139. https: //doi.org/10.3390/edu2673139
[11] Dieterle, E., et al. (2022). The cyclical ethical effects of using artificial intelligence in education: Five divides for equity. Frontiers in Artificial Intelligence, 5. https: //doi.org/10.3389/frai.2022.9513289
[12] Education Resource Strategies. (2024, November 11). How we can harness AI in education to transform school. https: //www.erstrategies.org/tap/ai-in-education/
[13] Rand Corporation. (2025, April 18). Teacher AI training remains uneven despite uptick. K 12 Dive. https: //www.k12dive.com/news/teacher-ai-training-remains-uneven-despite-uptick/745668/