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When Technology Speaks for Education: Uncovering Ideologies in South Korea's AIDT Policy Discourse

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ABSTRACT

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This study examines the ideological underpinnings of South Korea's Artificial Intelligence and Digital Textbook (AIDT) policy discourse. While digital innovation is often presented as a neutral and inevitable force in educational reform, critical scholarship highlights that policies are always ideologically situated. Drawing on policy documents, media reports, and government statements, this study employs an integrated methodological approach that combines text mining and critical discourse analysis (CDA) to uncover how the AIDT policy discursively constructs technology, teachers, and education. The analysis identifies three interrelated discourses: technological determinism, which frames technology as the autonomous driver of educational change; standardization and managerialism, which position AIDT as a tool for centralized control and uniform content delivery; and invisibility of the educational field, which marginalizes teachers' agency and local school contexts. Together, these discourses reveal how AIDT is framed less as a pedagogical tool than as an ideological and managerial project, aligning education with neoliberal and technocratic agendas. By analyzing the discursive construction of educational technology policy, this study advances critical perspectives on EdTech governance and highlights the need to re-situate technology within social, linguistic, and educational contexts.

KEYWORDS

Artificial Intelligence and Digital Textbooks (AIDT), educational technology policy, technological determinism, standardization and managerialism, teacher agency, critical discourse analysis

1. Introduction

Across the globe, governments are increasingly embracing digital technologies as part of their educational reform agendas. Artificial Intelligence and Digital Textbook (AIDT) initiatives have been introduced in many contexts with the aim of modernizing instruction, enhancing efficiency, and preparing learners for a technologically advanced future (Selwyn 2021, Williamson 2016). Proponents often frame these initiatives as forward-looking, necessary responses to rapid digital transformation and the demands of the Fourth Industrial Revolution. In this global context, educational technologies are positioned as neutral tools for innovation, promising to enhance teaching and learning through data-driven personalization, increased accessibility, and cost-effectiveness (Knox 2019, Selwyn 2021). However, critical scholarship has emphasized that language and education policies are never neutral; they are ideological instruments that reflect and reproduce broader social, political, and economic agendas (Ricento 2000, Shohamy 2006). This insight is crucial for examining how digital education initiatives are discursively constructed and justified.

In South Korea, the Ministry of Education announced in 2023 the introduction of AI-based digital textbooks (AIDT) as part of its national education reform plan (Ministry of Education 2023). Closely aligned with the 2022 revised national curriculum (NCIC 2022), this policy initially positioned AIDT as a transformative replacement for existing printed textbooks. However, the initiative soon underwent significant shifts: AIDT materials were downgraded to the status of supplementary learning resources rather than official national textbooks, and local governments were granted discretion over their adoption (Chosun Ilbo 2024). As a result, implementation has been uneven across regions, with some municipalities actively embracing the policy while others have delayed or resisted adoption. On the ground, many teachers expressed skepticism and resistance, citing insufficient infrastructure, misalignment with classroom realities, and concerns about top–down imposition (Cho 2025, Hong et al. 2025). These developments suggest that beneath the surface of technological innovation lie complex ideological and institutional dynamics that shape how policies are formulated, justified, and contested.

Existing research on AIDT has predominantly focused on its technological affordances, administrative implementation, or pedagogical effects, often emphasizing innovation and efficiency (Hong et al. 2025, Lee et al. 2025). Far less attention has been paid to the discursive construction of the policy itself—how language is used to frame technology, teachers, and learners, and what ideological stances underpin these framings. This gap is significant because policy discourse plays a key role in legitimizing particular visions of education and marginalizing others (Ball 1993, Fairclough 2013). As previous studies in critical language policy have shown, discourses surrounding educational reforms often reveal underlying assumptions about authority, standardization, and the role of teachers and learners (Johnson 2013, Tollefson 2012). The AIDT policy in South Korea provides a particularly revealing case, as its discourse reflects tensions between technological innovation and local educational realities.

This study aims to examine the underlying ideologies embedded in South Korea's AIDT policy discourse, focusing on how the policy constructs the role of technology, language, and education. Drawing on policy documents, media texts, and government statements, the study employs a multi-layered approach that combines text mining and critical discourse analysis (CDA). Specifically, it addresses the following research question: What underlying ideologies are embedded in South Korea's AIDT policy discourse? By addressing this question, the study contributes (a) a concrete empirical case analysis of EdTech policy discourse in South Korea; (b) a systematic demonstration of how computational text-mining outputs can be productively combined with CDA for ideological interpretation; and (c) a typology of ideological moves that shape technology-centered reforms.

2. Literature Review

2.1 Technological Determinism in Education Policy

Technological determinism has become one of the most pervasive discursive formations in contemporary education policy. At its core, technological determinism assumes that technological development drives social and educational change in a linear, inevitable, and largely autonomous manner. Within this frame, technology is routinely positioned as a neutral and future-oriented force that naturally propels educational reform. Such narratives tend to depict digital tools and platforms as self-evident goods, while sidelining the social, cultural, and political conditions under which they are designed and implemented.

As Selwyn (2021) notes, educational technologies are commonly represented as external agents of change, imagined as arriving from outside the field of education to modernize and improve classrooms. This 'outside-in' logic frames technology as something that happens to education rather than something shaped through contested institutional processes (Selwyn 2021). Earlier, Bowers (1988) characterized similar discourses surrounding educational computing as being grounded in unquestioned cultural assumptions, where the adoption of new technologies was treated as inherently progressive and beneficial. Deterministic policy rhetoric also mobilizes future imaginaries—invoking terms such as '21st-century skills,' 'digital transformation,' or 'industrial revolutions'—to portray technological adoption as both desirable and unavoidable (Facer 2015, Knox 2019). By presenting technology as neutral and unstoppable, policy discourse often displaces substantive debates about pedagogy, equity, and ideology onto the terrain of innovation itself.

A substantial body of critical scholarship has interrogated these deterministic narratives and highlighted their ideological consequences. Williamson (2016), for example, demonstrates how big-data systems and algorithms are discursively framed as objective forces that will inevitably reshape education, thereby legitimizing new modes of governance and institutional control. Facer (2012) critiques the construction of sociotechnical futures in policy as fixed destinations rather than negotiated possibilities. From postdigital perspectives, Selwyn (2021) and Knox (2019) similarly argue that deterministic narratives obscure the entanglement of technology with social and material contexts, masking human agency and institutional politics. Collectively, this scholarship reveals that technological determinism functions not simply as a descriptive stance but as a powerful ideological tool: assuming technology to be a benign catalyst of progress naturalizes existing power relations and forecloses alternative visions of education.

In sum, deterministic framings of technology play a central role in shaping how education systems imagine reform. These narratives construct technology as the primary driver of change while rendering the policy process itself technical, linear, and apolitical. Critical researchers therefore emphasize the need to move beyond such assumptions by attending to the situated, messy, and contested realities of technological adoption. Understanding these broader theoretical debates provides an essential foundation for analyzing specific education policies and the ideological work they perform—issues that are more appropriately addressed in the empirical findings of individual studies rather than in the literature review alone.

2.2 Standardization and Managerialism in EdTech Policy

Alongside technological determinism, standardization and managerialism constitute a second powerful ideological formation underpinning contemporary educational technology policies. Standardization refers to the policy-driven effort to render educational processes measurable, comparable, and governable through common

frameworks, benchmarks, and technical systems. Managerialism, frequently associated with New Public Management (NPM), involves importing private-sector logics of performance measurement, accountability, and efficiency into public education (Ball 2003). Within EdTech policy discourse, these two logics are routinely intertwined: digital technologies are portrayed as ideal instruments for achieving large-scale standardization, enabling centralized authorities to monitor, evaluate, and optimize learning outcomes across institutions.

In this discursive regime, policies emphasize datafication as a route to improved governance. As Ozga (2009) observes, data infrastructures have transformed governance in education from traditional regulation to self-evaluation, in which schools and teachers are made responsible for aligning with external standards through continuous data reporting. Williamson (2016) similarly highlights how data visualization and predictive analytics have become new policy instruments, making educational processes legible to administrative systems and facilitating action on institutions 'at a distance.' Sellar and Lingard (2017) describe this broader configuration as part of the global governance of education, where both national governments and international organizations deploy standardized metrics and digital platforms to steer educational practice. These analyses reveal that standardization is not simply a technical preference but an ideological project that recasts education as a domain to be managed through benchmarks, comparisons, and quantifiable indicators.

Critical scholarship has shown that such managerial discourses fundamentally reshape the purposes and practices of education. Ball (2003) famously described the emergence of the performative teacher, whose professional identity becomes defined by data targets and audits rather than pedagogical judgment. Lingard (2013) documents how national testing regimes in Australia produced curriculum narrowing and encouraged schools to privilege measurable outcomes over richer forms of learning. Williamson (2016) extends this critique to postdigital education, demonstrating how real-time data flows and dashboards reconfigure teachers, students, and classrooms as nodes in a datafied system, subject to continuous evaluation. Collectively, this body of research illustrates that managerialism operates not merely as an administrative logic but as an ideological agenda: it privileges efficiency and accountability while displacing concerns about pedagogy, equity, and identity that are less easily measured.

Moreover, recent developments in AI-driven assessment and automated evaluation technologies have intensified these tendencies. The promise of 'personalization,' often celebrated in policy rhetoric, is frequently grounded in the assumption that learning can be standardized and delivered more efficiently through adaptive systems. From an NPM perspective, technology becomes a mechanism of surveillance and control rather than a neutral aid. As Ozga (2009) notes, such governance models shift responsibility downward, compelling educational actors to internalize managerial norms and to treat compliance with technical systems as evidence of educational quality. This raises fundamental questions about whose interests are served when education is reframed as data management and performance optimization.

In sum, standardization and managerialism provide an essential theoretical lens for understanding the ideological work performed by educational technologies. These frameworks reveal how policy discourse constructs technology as a means of achieving accountability at scale while obscuring human agency and political contestation. Recognizing these broader debates offers the necessary conceptual foundation for analyzing specific EdTech policies in empirical research. The concrete manifestations of these ideologies, including their articulation in the South Korean context, should therefore be addressed primarily in the Findings and Discussion sections of the dissertation, where actual policy data can be presented and interpreted in depth.

2.3 Invisibility of the Field and Teacher Agency

A third major strand of critical research on education technology policy concerns the marginalization of local educational contexts and the erasure of teacher agency. While technological determinism frames technology as the primary driver of change and managerialism positions it as an instrument for standardization, both logics share a tendency to render the professional knowledge and situated practices of teachers invisible. The 'invisibility of the field' refers to the way policy discourses construct education as a uniform, technocratically manageable domain, abstracted from the social, cultural, and linguistic complexities of actual classrooms. This abstraction has long been identified as a recurring weakness of technology-focused reform rhetoric.

Early curriculum theorists such as Apple (2021) and Suárez-Guerrero, Rivera-Vargas, and Raffaghelli (2023) argued that education policy documents frequently ignore the political and professional roles of teachers. Apple described how technology-centered and standardized curriculum reforms reduce teachers to passive transmitters of centrally designed content, displacing practitioner judgment with policy authority. Suárez-Guerrero, Rivera-Vargas, and Raffaghelli (2023) similarly documented that successive waves of technological reform—from audiovisual devices to computers—have repeatedly overlooked teachers' expertise and classroom realities, leading to superficial implementation. These critiques highlight that policy erasure of teacher agency is not simply rhetorical but has material consequences for how reforms are designed, evaluated, and experienced by educators.

More recent scholarship has extended these insights to the contemporary EdTech landscape. Biesta (2015) offers a particularly influential critique, arguing that managerial and technological discourses reduce teaching to 'learning delivery,' stripping away the broader existential and pedagogical dimensions of education. In such framings, teachers are constructed not as professionals exercising contextualized judgment but as technicians executing predefined tasks. Selwyn (2021) describes how EdTech policy rhetoric routinely portrays classrooms as spaces that can be 'fixed' through technological intervention, rather than as dynamic social and cultural contexts. Mockler (2022) further demonstrates that datafied governance regimes undermine teachers' professional identity, as policy documents privilege measurable performance indicators over practitioner expertise. Collectively, these studies reveal how contemporary EdTech discourses contribute to the de-skilling of teachers (Apple 2021) by shifting authority away from educators and toward policymakers, technocrats, commercial actors, and platform logics.

Crucially, this strand of scholarship identifies the marginalization of classrooms and teachers as a recurring ideological tendency in EdTech policy across national contexts. Determinist narratives depict technology as arriving from outside education, managerialist logics frame it as enabling centralized monitoring, and depoliticizing discourses reduce teacher concerns to technical implementation problems. From postdigital and sociomaterial perspectives, scholars therefore argue that classrooms should be recognized as complex and contested sites of practice, where teachers' voices, pedagogical discretion, and situated expertise are essential for resisting technocratic simplification. In sum, these broader debates provide a valuable theoretical lens for analyzing the South Korean AIDT initiative as a concrete empirical case, and they establish the conceptual foundation for examining how reform rhetoric interacts with issues of agency, identity, pedagogy, and power—dimensions that can be most appropriately evidenced through detailed policy analysis and classroom accounts in the Findings and Discussion sections of the dissertation.

3. Method

This study adopts an integrated analytic design that combines text mining and Critical Discourse Analysis (CDA)

applied to a single, thematically focused corpus. The aim of this design is to examine how education technology policy is discursively constructed in South Korea and to uncover the ideological assumptions that are indexed in publicly circulating texts. Both procedures analyze the same dataset rather than different types of participants or measures. The computational stage maps lexical salience and relational patterns, while the CDA stage provides interpretive depth, enabling a coherent multilayered examination of policy discourse.

3.1 Corpus Construction

The corpus collection period was set from June 8, 2023 through December 31, 2024, beginning with the Ministry of Education's initial announcement of the AIDT initiative. The compiled dataset comprised approximately 80,000 words, drawn from the following sources: (A) national and local newspaper articles, opinion pieces, and editorials retrieved from major portals (Naver News and Google News); and (B) official press releases, policy briefings, and documents from the Ministry of Education and provincial and municipal education offices. These sources were selected because they constitute the most influential and publicly accessible channels through which the AIDT policy and related debates were circulated and evaluated. To maximize thematic and temporal coverage, search queries included multiple variants of both the official and colloquial names of the policy. Routine duplicate syndications, purely repetitive announcements, and texts that were clearly promotional in nature were excluded to preserve thematic relevance and analytic consistency. This structured corpus construction rationale enhances transparency and ensures the representativeness of the dataset with respect to the full span of policy debates.

3.2 Preprocessing and Text-Mining Procedures

After crawling and manual collection, the texts were prepared for computational analysis following established procedures in previous Korean discourse-mining studies (Lee 2022). Preprocessing involved systematic deduplication, extraction of article bodies, normalization of punctuation and whitespace, and standardization of numerals and units. Morpheme-based tokenization with part-of-speech tagging was carried out using Python-based NLP packages (KoNLPy), while preserving proper nouns, institutional names, and place names to retain socially meaningful references. Stopwords were removed, and lemmas were extracted to build a stable lexical inventory.

Keyword frequency and relative frequency were calculated to identify salient expressions across the corpus. A co-occurrence matrix was constructed within a fixed analytic window to examine how key terms clustered together in discourse, and semantic network analysis was then used to visualize relational structures among keywords and to detect thematically significant clusters (see Figure 1). Centrality measures, including degree and betweenness, were applied to identify nodes that played organizing roles in the policy debate. While the overall pipeline is structurally similar to earlier text-mining approaches, it was customized through the inclusion of a domain-specific lexicon related to AI, digital textbooks, and education policy, allowing for more precise identification of relevant relational patterns. This quantitative mapping phase did not constitute the final analytic outcome but provided an overview of salient lexical relations and contrasts that guided subsequent CDA interpretation.

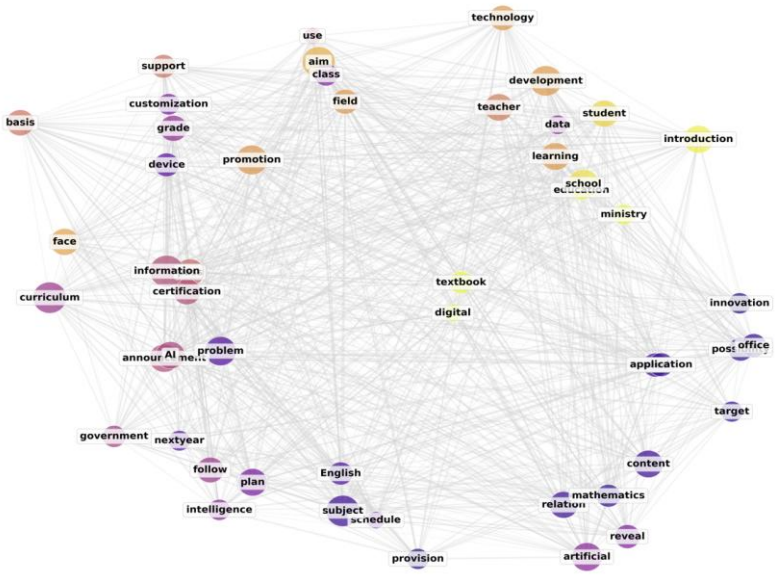

Figure 1. Keyword Co-occurrence Network in the AIDT Policy and Media Corpus

3.3 Standardization-Focused CDA Layer

The study employed a sequential analytic design in which Critical Discourse Analysis (CDA) was conducted as the interpretive layer building on the text-mining outputs. The computational mapping stage identified salient lexical clusters and recurring contrasts across the corpus, and CDA was then applied to interpret their ideological dimensions using Gee's (2025) step-by-step framework. In the first step, the analysis examined situated meanings by investigating how recurrent expressions were used at the sentence and paragraph levels and what local evaluative meanings they carried. In the second step, it focused on social languages, identifying how different policy actors mobilized distinct linguistic styles such as administrative-managerial rhetoric, journalistic evaluation, or practice-oriented commentary. In the third step, the analysis addressed broader discourse models, interpreting recurring contrasts and implicit assumptions in order to identify the ideological formations underpinning the EdTech policy discourse. Throughout this phase, interpretations required explicit textual justification, and discrepant cases were revisited to ensure analytic rigor. This qualitative procedure enabled the study to move beyond surface-level lexical networks and to provide deeper ideological explanations, reinforcing the coherence and systematicity of the overall analysis.

3.4 Bridging Logic between Text Mining and CDA

To reinforce methodological clarity, the study followed a sequential integration logic linking the computational and interpretive stages. The text-mining phase served as an exploratory mapping procedure that identified salient lexical clusters and central thematic nodes across the large collection of policy and media texts. These outputs did not function as final claims but as analytic guides. The CDA stage then built directly on this quantitative map by returning to the original textual contexts in which these keywords appeared and interpreting how they constructed technology, teachers, and educational change. In this sense, text mining provided breadth and orientation, while

CDA supplied interpretive depth and ideological explanation. Making this procedural relationship explicit ensures transparency and strengthens the coherence of the integrated analytic approach employed in this study.

4. Results

4.1 Determinist Constructions of AI Textbooks

A prominent feature of the AIDT policy discourse is the assumption that technological innovation will autonomously drive educational transformation. Across official policy documents and media reports, technology is consistently foregrounded as the primary agent of change, while human actors and institutional processes are relegated to the background. Text-mining analysis revealed dense co-occurrence patterns structured around operational and institutional vocabularies related to technology use and governance. Rather than abstract ideological terms functioning as dominant standalone keywords, educational reform is discursively organized through relational clusters that render technological change natural and progressive. Within this discursive landscape, educational transformation is not presented as a socially negotiated process shaped by pedagogical judgment, institutional conditions, or local practices, but as an outcome that follows automatically from technological advancement. This framing aligns with longstanding critiques of technological determinism in education policy, in which technology is imagined as the primary driver of reform independent of social mediation (Bowers 1988, Selwyn 2021, Suárez-Guerrero et al. 2023).

From a critical discourse perspective, this pattern corresponds to what has been described as a determinist imaginary in educational technology policy, in which technology is positioned as a neutral, self-propelling force capable of modernizing education irrespective of contextual variation (Selwyn 2021, Facer 2012). Rather than acknowledging the cultural, social, and institutional mediations that shape how technologies are enacted in classrooms, the AIDT discourse repeatedly constructs technology as a quasi-human actor endowed with agency, intentionality, and transformative capacity. This orientation is not expressed through a single linguistic feature, but is sustained through a constellation of recurring rhetorical strategies that include technological personification, future-oriented modality, and the systematic erasure of human agency (Knox 2019).

One central strategy through which technological determinism is realized is the personification of technology. In both policy and media texts, AI or digital textbooks frequently occupy grammatical subject positions and are paired with agentive verbs that are conventionally associated with human actors such as teachers, curriculum designers, or institutions. Extracts 1a–1c illustrate this pattern:

[Extract 1]

(a) AI will automatically analyze students' learning levels and provide personalized materials tailored to their abilities. (Policy Briefing-18)

(b) Digital textbooks will lead the innovation of classrooms in the era of AI. (Media Report-61)

(c) AI-based textbooks will reshape how learning takes place in the classroom. (Policy Press-12)

Taken together, these extracts demonstrate how technology is linguistically constructed as an autonomous actor capable of initiating, directing, and completing pedagogical processes. The verbs analyze, lead, and reshape attribute epistemic authority and transformative power directly to technology, while teachers and students are

positioned as passive recipients of technological intervention or omitted entirely from the clause structure. Through such grammatical configurations, agency is transferred from human actors to technological systems, reinforcing the perception that educational change originates from technology itself rather than from pedagogical or institutional decision-making. This pattern reflects what Selwyn (2021) describes as the discursive animation of educational technologies, as well as Knox's (2019) notion of the technological sublime, in which digital systems are represented as autonomous forces of progress.

A second discursive strategy reinforcing technological determinism is the pervasive use of future-oriented modality. Policy and media texts consistently employ modal verbs and evaluative expressions that frame technological change as inevitable and historically preordained, rather than as contingent or debatable. This pattern is evident in Extracts 2a–2b:

[Extract 2]
(a) With the arrival of the AI era, classrooms will naturally be transformed. (Policy Briefing-9)
(b) The role of teachers is bound to change as AI-based textbooks become the norm. (Media Report-23)

In these formulations, modal expressions such as will, naturally, and bound to construct a deterministic temporal trajectory in which educational transformation is presented as unavoidable. These statements do not describe possible futures or conditional scenarios; instead, they assert technological change as a historical necessity. By framing the future in this way, the discourse minimizes uncertainty and forecloses alternative educational trajectories, positioning technological adoption as an unquestionable progression rather than a matter of pedagogical or political deliberation. This temporal logic closely aligns with what Facer (2012) terms future-oriented determinism in educational policy discourse.

A third and closely related feature of technological determinism in the AIDT discourse is the erasure of human agency. Teachers, students, and local communities are frequently backgrounded, abstracted, or entirely absent from policy statements, even when educational outcomes are being described. This pattern is illustrated in Extracts 3a–3b:

[Extract 3]
(a) Through AIDT, the curriculum will be individualized, and student achievement will be maximized. (Policy Press-2)
(b) Learning gaps will be automatically addressed through AI-based content delivery. (Media Report-41)

Here, educational outcomes such as individualization and achievement are attributed directly to technology through passive constructions. No human actors are identified as responsible for implementing, mediating, or contesting these processes. The grammatical structure of these statements presents educational change as an automatic and self-executing process, effectively obscuring the labor, judgment, and negotiation that typically accompany pedagogical reform. As a result, teachers and students appear not as agents of change, but as beneficiaries of technological intervention—an effect that mirrors what Selwyn (2021) characterizes as the depoliticization of education through technology.

These qualitative patterns are reinforced by quantitative findings from the text-mining analysis. Abstract notions commonly associated with digital reform—such as innovation, personalization, and transformation—did not appear primarily as isolated high-frequency keywords but were discursively articulated through implementation-oriented vocabularies clustered around technology, data, and system use. Co-occurrence analysis showed that

terms referring to teachers, classrooms, or students appeared predominantly in object positions (e.g., AI will change teachers' roles, students will benefit), rather than as grammatical subjects associated with agentive verbs. Moreover, references to local contexts or teacher agency were extremely rare, accounting for less than 2% of the total keyword occurrences. This distribution quantitatively corroborates the qualitative observation that the discourse systematically foregrounds technology while backgrounding human actors, a pattern widely documented in critical studies of educational technology reform (Suárez-Guerrero et al. 2023, Selwyn 2021).

Taken together, these findings demonstrate that technological determinism is not an incidental feature of the AIDT policy discourse, but a recurring and structurally embedded pattern. Through personification, future-oriented modality, and agentive erasure, technology is consistently constructed as the primary driver of educational transformation, while teachers, students, and institutions are rendered peripheral. This determinist framing establishes the conditions under which subsequent policy logics operate. Once technology is discursively positioned as the agent of change, attention shifts from questions of pedagogical judgment and local adaptation to issues of standardization, regulation, and scalability. The following section examines how this determinist narrative is operationalized through discourses of standardization and managerialism.

4.2 Datafication and Platform Governance

While technological determinism positions technology as the inevitable driver of educational change, the AIDT policy discourse also specifies the mechanisms through which this transformation is to be enacted. Once AIDT is framed as an autonomous agent of innovation, the policy narrative turns toward questions of standardization, regulation, and national-scale implementation. In this shift, technology is no longer presented merely as transformative but as a managerial instrument for producing uniform, measurable, and governable educational practices across diverse contexts. This orientation corresponds to broader critiques of data-driven and managerial governance in education, where reform is increasingly articulated through technical systems rather than pedagogical deliberation (Ball 2003, Ozga 2009).

Text-mining analysis provides clear evidence of this managerial orientation. Across the policy and media corpus, references to AIDT were embedded within dense co-occurrence clusters centered on standardization, data management, and large-scale coordination, indicating a strong alignment between digital textbooks and administrative governance logics. These lexical patterns indicate that digital textbooks are consistently framed as tools for standardization, designed to impose coherence and uniformity on educational content and practice. Rather than emphasizing adaptability or contextual sensitivity, the discourse highlights the capacity of AIDT to deliver identical materials, pathways, and outcomes at scale. This logic is illustrated in the following extracts:

[Extract 4]
(a) By distributing standardized digital learning materials nationwide, educational quality will be equalized and efficiency enhanced. (Policy Press-19)
(b) AIDT will provide a unified learning pathway for all students across the country, ensuring consistent learning outcomes regardless of region or school. (Policy Briefing-35)
(c) Standardized digital textbooks will serve as the foundation for managing learning quality at the national level. (Policy Report-21)

Taken together, these extracts show how standardization is discursively linked to normative policy goals such as equality, quality, and efficiency. Digital textbooks are constructed as inherently standardizable objects whose

nationwide distribution is assumed to produce educational equity. In this framing, equality is equated with uniformity, and pedagogical variation is implicitly positioned as a problem to be addressed through centralized technological solutions. Learning is represented not as a situated practice but as a process that can be aligned to a single, nationally defined trajectory.

A second dimension of managerialism emerges through the emphasis on monitoring, data analytics, and real-time oversight. Policy and media texts repeatedly foreground the capacity of AIDT to generate continuous streams of learning data, enabling centralized observation and control of educational processes. This pattern is evident in Extracts 5a–5b:

[Extract 5]
(a) Through the digital textbook system, student learning data will be collected and analyzed in real time, enabling centralized monitoring of learning progress. (Media Report-114)
(b) By integrating AIDT with the national education data system, student learning can be managed uniformly and efficiently. (Policy Press-42)

In these formulations, data collection and analysis are presented as natural extensions of digital textbook use. Learning is reconceptualized as a data-generating activity, and educational governance is reframed as the management of information flows. Agency is again attributed to technological systems, while decision-making is centralized at the policy level. This shift marks a movement from technology as an abstract agent of change to technology as a concrete apparatus for control, consistent with critiques of datafied education governance (Williamson 2016).

The spatial language of the policy further reinforces this managerial logic. Recurrent references to nationwide distribution and uniform implementation frame the education system as a homogeneous space to be governed through centralized digital infrastructures. In one policy statement, AIDT was described as "a way to overcome disparities between regions and schools by providing standardized digital textbooks and assessments to all students simultaneously" (Policy Briefing-27). Here, social and educational inequalities are discursively reframed as technical problems solvable through synchronized technological delivery, rather than as structural conditions requiring differentiated pedagogical responses.

This managerial orientation also reshapes the professional roles of teachers and schools. Rather than being positioned as pedagogical agents or curriculum designers, teachers are primarily constructed as implementers and monitors of standardized systems.

[Extract 6]
Teachers will use AIDT to monitor student learning progress and provide feedback according to standardized data indicators. (Policy Briefing-26)

In this formulation, teachers' work is defined in relation to data produced by technology, rather than in terms of pedagogical judgment or instructional design. Teachers are positioned as users of standardized systems rather than as co-constructors of educational practice, reflecting broader critiques of managerial reforms that reconfigure teacher professionalism around compliance and monitoring rather than autonomy and expertise (Ball 2003, Mockler 2022). Schools, similarly, are treated as administrative units responsible for ensuring fidelity to nationally defined processes, rather than as locally embedded institutions with distinct educational cultures and pedagogical traditions (Ozga 2009).

Quantitative evidence from text-mining analysis reinforces these observations. Terms referring to teachers, students, and schools were primarily positioned within implementation-oriented discursive environments, where they were associated with procedural actions related to system use, compliance, and monitoring rather than pedagogical decision-making. In contrast, AIDT and policy institutions occupied subject positions associated with agentive verbs such as provide, distribute, standardize, and manage. This asymmetrical distribution of grammatical agency exemplifies what Fairclough (2013) describes as patterned agency allocation, through which power and responsibility are discursively centralized while frontline educational actors are positioned as compliant implementers.

Taken together, these findings demonstrate that standardization and managerialism function as central mechanisms through which technological determinism is operationalized in the AIDT policy discourse. Once technology is established as the primary agent of change, managerial logics define how that change is to be controlled, measured, and scaled, aligning with broader critiques of data-driven education governance (Selwyn 2021, Williamson 2016). This discursive configuration sets the stage for the systematic marginalization of the educational field itself, which is examined in the following section.

4.3 Marginalization of the Educational Field

While technological determinism foregrounds technology as the inevitable agent of educational transformation and managerialism frames its implementation through standardized infrastructures, these discourses together produce a systematic marginalization of the educational field itself. In the AIDT policy discourse, teachers, students, and local school contexts—ostensibly the core actors of educational practice—are discursively backgrounded, rendered passive, or excluded altogether. This invisibility is not simply an omission, but an ideological effect of how educational change is imagined and governed, reflecting a technocratic vision in which transformation is driven by technology and administered through centralized systems rather than enacted through pedagogical practice (Apple 2021, Selwyn 2021).

Text-mining analysis provides a clear indication of this marginalization. References to teachers, students, and schools appeared less prominently than terms such as AIDT, policy, standardization, and Ministry. When educational actors were mentioned, their grammatical positions were overwhelmingly non-agentive. The most frequent collocations involving teachers were associated with verbs such as use, apply, follow, and monitor, indicating roles oriented toward implementation rather than pedagogical initiation. In contrast, AIDT and policy institutions consistently occupied subject positions paired with agentive verbs such as introduce, provide, standardize, and manage. This asymmetrical allocation of agency corresponds to what Fairclough (2013) identifies as patterned syntactic agency, through which institutional power is discursively centralized while frontline actors are backgrounded. This configuration becomes particularly visible in policy texts that define teachers' roles in narrowly instrumental terms, as illustrated in Extracts 7a–7b.

[Extract 7]

(a) Teachers will use AIDT to monitor students' progress and provide feedback according to standardized data indicators. (Policy Document-3)

(b) Teachers are expected to follow the standardized digital learning pathway provided through AIDT. (Policy Briefing-14)

In these formulations, teachers are positioned not as curriculum designers or pedagogical decision-makers, but

as users and monitors of systems designed elsewhere. Pedagogical judgment, contextual adaptation, and professional discretion are absent from the description of teachers' work. Instead, instructional activity is framed as a response to data outputs generated by technology, reflecting a managerial reconfiguration of teacher professionalism long critiqued in studies of educational reform (Apple 2021, Mockler 2022).

A similar pattern of marginalization is evident in media representations of the policy. Teachers' voices are either absent or framed as secondary reactions rather than authoritative perspectives. This is illustrated in Extracts 8a–8b:

[Extract 8]

(a) Some teachers have expressed concerns about infrastructure and classroom applicability, but the Ministry emphasized that these issues will be resolved through gradual implementation. (Media Report-87)

(b) Despite initial concerns from schools, officials stated that digital textbooks will stabilize classroom practices over time. (Media Report-102)

Here, teachers' concerns are acknowledged only briefly before being subordinated to institutional reassurance. The passive construction has expressed concerns and the immediate discursive shift to ministerial authority exemplify what Fairclough (2013) terms framing moves, through which alternative perspectives are contained rather than engaged. Teachers appear not as knowledgeable professionals but as hesitant adopters whose reservations are framed as temporary obstacles to be managed.

More revealing than what is said, however, is what remains unsaid. Across policy reports and official press releases, there is little substantive discussion of how teachers might adapt AIDT to specific classroom contexts, how students might meaningfully engage with digital materials, or how schools might navigate infrastructural and cultural disparities. Educational practice is addressed at a high level of abstraction, with emphasis placed on technological functions, delivery systems, and monitoring mechanisms. The heterogeneous realities of classrooms—differences in pedagogical culture, student needs, and local conditions—are largely absent from the discourse. As Suárez-Guerrero et al. (2023) and Selwyn (2021) have observed in other waves of educational technology reform, such omissions are not incidental but structural features of policy narratives that privilege governance over practice.

This marginalization extends beyond teachers to students and schools. Students are repeatedly invoked as abstract beneficiaries of reform—all students will benefit equally—without recognition of linguistic, cultural, or socio-economic diversity. There is no discussion of how students' engagement, motivation, or learning trajectories might shape or be shaped by AIDT. Schools, similarly, are constructed as uniform administrative units rather than as locally embedded institutions. Spatial expressions such as nationwide distribution and uniform implementation across regions flatten local variation, while regional disparities are framed as technical problems to be solved through infrastructure upgrades rather than as structural conditions requiring differentiated responses (Ozga 2009).

From a critical discourse perspective, this marginalization constitutes a form of constitutive silence. Through agentive inversion, nominalization, and abstraction, policy texts systematically position non-human entities—technology and policy institutions—as active subjects, while relegating educational actors to peripheral or object positions. Even when teachers and schools are mentioned, they are framed in ways that align their roles with compliance and adaptation rather than deliberation or design. The cumulative effect of these discursive strategies is the erasure of pedagogical judgment and local knowledge, echoing what Biesta (2015) describes as the disappearance of teaching from contemporary education policy discourse.

Taken together, these findings demonstrate that the marginalization of the educational field is not an unintended

by-product of AIDT policy discourse but a structural consequence of its underlying logics. By foregrounding technology as the agent of change and managerial systems as the means of implementation, the discourse renders teachers, students, and schools largely invisible as active participants in educational transformation. This technocratic imaginary offers a streamlined vision of reform, but it does so at the cost of silencing the very actors whose engagement is essential for meaningful educational change—a tension that lies at the heart of contemporary debates on digital education governance (Knox 2019, Selwyn 2021).

5. Discussion and Conclusion

This study set out to examine how South Korea's AIDT policy discourse constructs the role of technology, governance, and educational actors through language. By combining text-mining techniques with critical discourse analysis, the analysis revealed three interrelated discursive formations—technological determinism, standardization and managerialism, and the systematic invisibility of the educational field—that together shape how AI-based digital textbooks are imagined, justified, and governed. Rather than treating these patterns as isolated rhetorical tendencies, this study interprets them as a coherent ideological configuration that redefines educational change as a technocratic and depoliticized process. The findings demonstrate that technological determinism functions as the discursive foundation of the AIDT policy. Across policy documents and media texts, technology is repeatedly constructed as an autonomous agent capable of transforming classrooms, personalizing learning, and modernizing education with minimal reference to human mediation. Through personification, future-oriented modality, and agentive inversion, AI and digital textbooks are endowed with intentionality and efficacy, while teachers and students are positioned as passive recipients of technological action.

This framing resonates strongly with previous critiques of educational technology discourse that identify a persistent tendency to portray technology as a neutral and self-propelling force (Facer 2012, Selwyn 2021). What the present study adds is empirical evidence—both qualitative and quantitative—showing how this determinist imaginary is systematically reproduced through grammatical patterns and keyword distributions in contemporary Korean policy discourse. Educational change is thus naturalized as an automatic consequence of technological advancement, rather than as a contested and socially negotiated process shaped by pedagogical judgment, institutional conditions, and local practices. Crucially, this determinist framing does not merely exaggerate the potential of technology; it also narrows the space for debate. By presenting AI-driven reform as inevitable, the policy discourse forecloses questions about whether such reforms are desirable, appropriate, or contextually viable. In doing so, it shifts educational decision-making away from deliberation and toward compliance with a presumed technological trajectory.

While technological determinism establishes technology as the driver of change, discourses of standardization and managerialism translate this vision into concrete policy mechanisms. The analysis shows that AIDT is consistently framed as a tool for producing uniformity, efficiency, and measurability across the education system. These co-occurrence patterns suggest that digital textbooks are discursively imagined less as pedagogical resources than as infrastructures for centralized coordination and governance, aligning learning processes with standardized, data-driven administrative logics. This managerial orientation reflects a broader shift in educational governance, in which policy increasingly relies on datafication and standardized systems to manage learning processes (Ball 2003, Ozga 2009, Williamson 2016). In the AIDT discourse, learning is reconceptualized as a data-generating activity, and educational quality is equated with consistency and scalability. Teachers' roles are correspondingly redefined: rather than exercising pedagogical judgment or adapting materials to local contexts, teachers are

positioned as monitors and implementers who ensure alignment with standardized digital pathways. Importantly, the analysis suggests that managerialism is not an accidental by-product of digitalization but a discursive necessity once technological determinism is established. If technology is assumed to drive change autonomously, governance logically shifts toward regulating, standardizing, and scaling that technology. In this sense, managerialism does not merely accompany technological reform; it operationalizes it.

Perhaps the most consequential implication of these discourses is the systematic erasure of the educational field itself. Teachers, students, and schools—ostensibly the central actors in education—are rendered peripheral or invisible within the AIDT policy narrative. When teachers are mentioned, they appear primarily as users of technology or managers of data, not as intellectual professionals or pedagogical decision-makers. Students are invoked as abstract beneficiaries of standardized systems, while schools are treated as uniform administrative units rather than as locally embedded institutions with distinct cultures and constraints. This invisibility is ideologically significant. As critical scholars have long argued, the marginalization of educational actors is a recurring feature of top–down reform initiatives that prioritize efficiency and control over professional agency (Apple 2021, Biesta 2015, Mockler 2022). The present study shows how such marginalization is accomplished discursively: through agentive inversion, abstraction, and the framing of educational processes as technical rather than social practices. The cumulative effect is a policy discourse that depoliticizes education. By erasing the voices of teachers and students, the AIDT narrative minimizes potential sources of resistance, contestation, or alternative imaginaries. Educational reform is thus framed as a technical challenge to be managed, rather than as a collective project requiring negotiation, trust, and professional expertise.

Taken together, these findings suggest that AIDT is not merely a technological initiative but a discursive project that reshapes how education is understood and governed. Technological determinism, managerialism, and invisibility operate as mutually reinforcing elements: determinism naturalizes change, managerialism controls its implementation, and invisibility removes those most affected from meaningful participation. This configuration aligns with broader neoliberal tendencies in education policy, where efficiency, scalability, and data-driven management take precedence over pedagogical and social considerations (Duchêne and Heller 2012, Park 2021). By foregrounding discourse rather than implementation outcomes, this study contributes to EdTech research by showing how language itself plays a constitutive role in shaping educational futures. It demonstrates that policy texts do not simply describe reforms; they actively produce particular visions of education, agency, and governance.

The findings underscore that AIDT policy is not neutral or purely technical (Shohamy 2006, Ricento 2000). Rather, it reflects a particular ideological configuration that prioritizes technological solutions, centralized governance, and measurable outcomes while downplaying the role of human agency and local context. In doing so, the policy risks reproducing long-standing tensions in educational reform, where ambitious technological visions clash with the realities of classroom practice and professional expertise. For policymakers, these findings highlight the importance of rethinking how digital education initiatives are framed and communicated. Policies that position technology as an autonomous solution risk alienating teachers, overlooking contextual diversity, and exacerbating implementation gaps. More participatory approaches—ones that recognize teachers and students as active agents rather than passive recipients—are essential if digital reforms are to be meaningful and sustainable. For researchers, this study demonstrates the value of examining EdTech policy as discourse. By attending to language, agency, and ideology, scholars can move beyond evaluations of effectiveness or innovation to interrogate the power relations and assumptions embedded in policy narratives. Such analyses are particularly urgent as AI-driven technologies become increasingly central to educational governance worldwide. The 'so what' of this study, then, is clear: technological education reforms are never just about technology. They are about power, ideology, and the futures that are imagined, legitimized, and enacted through discourse.

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Examples in: English
Applicable Languages: English
Applicable Level: Elementary, Secondary

