

Table S1. PRISMA 2020 Reporting Checklist

Item-by-item PRISMA 2020 assessment mapped to sections and line numbers of the main manuscript. **Responses:** *Yes* = clearly reported; *N/A* = not applicable (meta-analysis / prospective-protocol items only).

#	Item	Section/Line	Resp.	Notes
1	Title: identifies the report as a review	Title; L91	Yes	“Structured Narrative Review” appears explicitly in the title
2	Abstract: structured summary	L132–134	Yes	Background, Methods, Results, Limitations, Conclusions; PRISMA-for-Abstracts format
3	Rationale: explicit rationale	Introduction (L188–194)	Yes	Clear motivation and research gap
4	Objectives: explicit review questions	L196–207	Yes	Numbered questions Q1–Q4 in dedicated subsection
5	Eligibility criteria: inclusion/exclusion	L250–267	Yes	Formatted block with bulleted Inclusion and Exclusion Criteria; operationalized domain exclusions
6	Information sources	L233–234	Yes	Scopus as primary source; search date 29 Jan 2026
7	Search strategy	L237–246	Yes	Full Scopus query verbatim with all Boolean operators and temporal filters
8	Study selection process	L269–271 and L401–415	Yes	Two-stage process: rule-based thematic assignment + branch-level semantic screening by designated section lead; borderline cases resolved by co-author discussion
9	Data extraction process	L273–286	Yes	Dedicated “Data Extraction Protocol” subsection; handling of missing details explicitly stated
10a	Data items: variables extracted	L275–283	Yes	6 categories: bibliographic metadata, model family, target modality, evaluation context, branch descriptors, synthesis role
10b	Data items: missing data	L286	Yes	Stated: retained only information present in source; unresolved details treated as qualitative limitations
11	Risk of bias assessment	L297–298	Yes	Structured per-study appraisal using pre-defined response categories (clear, adequate, strong, weak or unclear, robust, moderate concerns, high concerns) by each section lead; GRADE not used (disclosed)
12	Effect measures	—	N/A	No meta-analysis
13a	Synthesis methods: approach	L288–300	Yes	Dedicated “Synthesis Methods” subsection; five-point characterization: rationale, subtheme organization, comparative framework, results presentation, evidence level
13b	Synthesis methods: rationale	L290–300	Yes	High heterogeneity in design, task definition, evaluation protocol makes statistical pooling inappropriate
13c	Synthesis methods: results presentation	Sections 3–6 (L417–1603) + Tables	Yes	Four thematic sections with tables and detailed narrative synthesis
13d	Synthesis methods: software	L302–311	Yes	Structured workbench documented; no dedicated meta-analysis software (narrative synthesis)
13e	Heterogeneity investigations	—	N/A	Narrative review; not applicable
13f	Sensitivity analyses	—	N/A	Narrative review; not applicable
14	Reporting bias assessment	—	N/A	Not applicable to narrative synthesis without quantitative pooling
15	Certainty of evidence assessment	—	N/A	GRADE not applicable to narrative synthesis; disclosed in the evidence-level statement at L297–298
16a	Study selection: flow and numbers	L313–399 (PRISMA diagram)	Yes	Diagram: 1,524 → thematic assignment → branch screening → 117 retained

Table S1 continued. . .

#	Item	Section/Line	Resp.	Notes
16b	Study selection: excluded studies	Suppl. Note after PRISMA diagram	Yes	Section-specific exclusion patterns; 188 multimodal exclusion records available on request
17	Study characteristics	Sections 3–6 (L417–1603) + Tables 1–4	Yes	Characteristics in all four thematic tables and narrative
18	Per-study results	Tables 1–4 + narrative	Yes	Per-study summaries: attributes, contributions, evaluation context, model family
19	Results per outcome	Sections 3–6 (L417–1603)	Yes	Each of the four branches presents dedicated synthesis organized by subtheme clusters
20a	Synthesis results	Sections 3–6 (L417–1603)	Yes	Thematic synthesis per branch: dominant trends, evaluation patterns, research challenges
20b	Effect estimates	—	N/A	Narrative synthesis; no meta-analysis
20c	Heterogeneity	—	N/A	Narrative synthesis; no meta-analysis
20d	Sensitivity analyses	—	N/A	Narrative synthesis; no meta-analysis
21	Reporting bias	—	N/A	Not applicable to narrative synthesis
22	Certainty of evidence	—	N/A	Not applicable to narrative synthesis
23a	General interpretation	Discussion (L1609–1621)	Yes	Comprehensive discussion section
23b	Limitations of evidence	L1617	Yes	Dedicated paragraph: heterogeneity in publication type, proof-of-concept bias, uneven domain transferability, incomplete benchmarks
23c	Limitations of review	L1619	Yes	Single-source limitation and qualitative synthesis limitation noted
23d	Implications	L1621–1631	Yes	Research directions and practical implications discussed
24a	Protocol registration	L302–303	Yes	Review not registered in PROSPERO or any public registry
24b	Protocol availability	L302–303	Yes	No formal protocol prepared prior to execution
24c	Protocol amendments	—	N/A	No protocol; not applicable
25	Funding statement	L1637	Yes	Funding and support acknowledged
26	Conflicts of interest	L1647	Yes	Conflict of interest statement present
27	Data availability	L1643	Yes	Dedicated Data Availability paragraph; corpus in manuscript tables; additional materials available on request

Summary: Yes: 25 Partial: 0 No: 0 N/A: 12

Table S2. Review Search, Selection, and Artifact Summary

Table S2. Structured search, thematic assignment, and retained corpus.

Parameter	Value
Primary database	Scopus
Search date	29 January 2026
Records retrieved	1,524
<i>Thematic assignment (rule-based keyword matching on title/abstract/keywords)</i>	
Generative models and architectures	606
Quality assessment and metrics	304
Applications of AI-driven generation	308
Multimodal and cross-lingual aspects	306
<i>Branch-level screening (intermediate and final retained counts)</i>	
Generative models: assigned → retained	606 → 34
Quality assessment: assigned → candidates → retained	304 → 30 → 23
Applications: assigned → candidates → retained	308 → 103 → 29
Multimodal and cross-lingual: assigned → candidates → retained	306 → 74 → 31
Total retained	117
<i>Branch-level excluded records (assigned minus retained)</i>	
Generative models branch	572
Quality assessment branch	281
Applications branch	279
Multimodal and cross-lingual branch	275
Multimodal branch: structured exclusion records available	188 documented
<i>Structured per-study appraisal quality distribution (retained corpus)</i>	
Quality assessment (23 retained): Robust 16; Moderate concerns 6; High concerns 1	
Applications (29 retained): Robust 16; Moderate concerns 11; High concerns 1; Strong 1	
Multimodal and cross-lingual (31 retained): Robust 23; Moderate concerns 8	
Generative models (34 retained): Robust 18; Moderate concerns 14; High concerns 2	
<i>Review workflow documentation</i>	
PRISMA 2020 checklist	Table S1 (this document)
Branch-level appraisal workbench	Available on request
Excluded-studies records (multimodal branch)	Available on request

The review was not prospectively registered in PROSPERO or any other public registry, and no formal protocol was prepared prior to execution. The methodology is fully described in Section 2 of the main manuscript.