

A systematic literature review mapping evidence on generative AI, self-directed learning and open education

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The Future of Education International Conference 16th Edition
18 – 19 June 2026, Florence



Setting the scene



GenAI changes how users access information, generate text, receive feedback, engage with OER (Chowdry & Chowdry, 2025; Jin et al., 2025; Tlili et al., 2026)



Opportunities and challenges



Relevant to open education

Access, sharing, adaptation, co-creation (Ehlers, 2011)



GenAI supports open education

Revision, remixing, localisation and adaptation of OER

Setting the scene

- Self-directed learning (SDL) (Knowles, 1975) is central
- In GenAI and open learning environments
 - SDL requires identify learning needs, select appropriate tools, evaluate information, monitor progress, make informed decisions
 - Greater need to critically evaluate information
- GenAI can support SDL
 - feedback, explanations, learning pathways and resource recommendations
- GenAI can also weaken SDL (Navas Bonilla et al., 2025)
 - over-dependence, reduce critical thinking and independent decision making

Research Question

What evidence exists on the relationship between GenAI, SDL and open education?

Research Design and Methodology

Interpretivist paradigm

Qualitative systematic literature review (SLR)

SLR

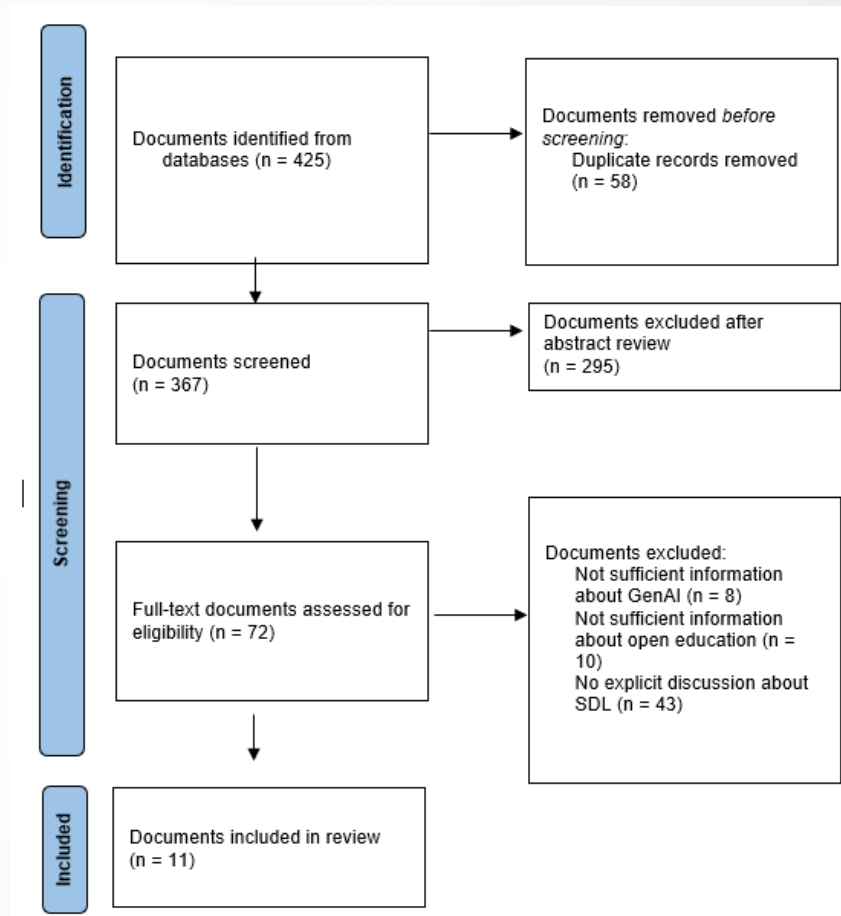
- locate, assess, and integrate existing studies
- Phases: research, question, inclusion criteria, searching, screening, selecting texts, data extraction, coding, synthesising findings (Kitchenham et al., 2010; Tranfield et al., 2003)

Scopus, ScienceDirect, Web of Science

Keywords

PRISMA framework

Research Design and Methodology



Research Design and Methodology

- Inclusion criteria
 - peer-reviewed book chapters and research articles,
 - publications dated from 2022 to 2026;
 - texts which specifically discuss all three main themes (SDL, open education and GenAI);
 - English texts; and
 - review papers, conceptual work and empirical research

Findings and Discussion: Profile of the corpus (Research Design, Data Sources and Contexts)

Text	Research design	Data sources	Educational context
Ahmadfart [31]	Structured literature review and thematic synthesis	Database search and reviewed literature	Open education Interactive open educational resources (iOER)
Biyiri et al. [32]	Quantitative, deductive survey study	Online questionnaire; 627 undergraduate responses	Sri Lankan state universities
Bosch and Kruger [33]	Conceptual paper	Literature-based conceptual discussion	SDL, student agency and AI chatbots as OER
Bunt and Bunt [34]	Analytical autoethnography	Reflection on the design of <i>Prosper</i>	Sustainability education Game-based learning
Laubscher et al. [35]	Theory-synthesis	Literature-based synthesis	OEP, 4IR and SDL
Li et al. [6]	Qualitative phenomenological study	Interviews with 19 YouTubers who are experienced, self-directed language learners	Self-directed language learning (SDLL)

Findings and Discussion: Profile of the corpus (Research Design, Data Sources and Contexts)

Text	Research design	Data sources	Educational context
Li et al. [17]	Qualitative study	Semi-structured interviews were conducted with 14 facilitators of online language courses	Online language facilitators
Maphalala [36]	Qualitative phenomenological study	Interviews with four academics and focus group discussions involving ten fourth-year BEd students	South African ODeL
Navas Bonilla et al. [8]	PRISMA-based systematic review	Scopus and Web of Science; 77 studies	AI and SDL
Ruiz-Rojas and Acosta-Vargas [37]	Qualitative exploratory study	Interviews, observation and student-created artefacts	MOOC development
Tlili et al. [5]	Scenario and conceptual contribution	OEP-based scenarios	Open education and GenAI

Discussion and Findings: Conceptual Links Between Generative AI, Self-Directed Learning and Open Education

OER

- “a next-generation direction” (Ahmadfard, 2026)
- Connected to access, adaptation and sharing (Bosch & Kruger, 2024)
- OER and SDL connect where learners become active co-creators of knowledge (Laubscher et al., 2025)

SDL

- Knowles’ (1975) definition of SDL – process
- Initiative, independence, persistence, self-discipline, curiosity, confidence (Bosch & Kruger, 2024)
- Autonomy, exploration of own learning (Bunt & Bunt, 2025)

Discussion and Findings: Conceptual Links Between Generative AI, Self-Directed Learning and Open Education

Learner Agency – strongest connection across concepts

- Co-creation with students, defining objectives (Bosch & Kruger, 2024)
- GenAI can enhance open pedagogy (Ahmadfard, 2026)
- OEP can support safe and effective adoption of GenAI (Tlili et al., 2024)

GenAI can support SDL and open education when it

- Strengthens learner agency
- Participation
- Reflection
- Responsible use

Discussion and Findings: Roles and Capabilities of GenAI tools

- GenAI
 - Multifunctional tool
 - Chat GPT most commonly used tool
 - Performance expectancy and social influence
 - Conversational assistant
 - GenAI supports learning processes
 - Feedback, tutoring, mentoring, assessment , learning design, practical applications, research, exploration
 - Personalised feedback, finding resources, increased engagement, language development, self-evaluation
 - Writing support, content clarification, note organisation, feedback, summarising content
 - GenAI = Tool for open pedagogy
 - Collaborative prompt development
 - OER-based GPT models

Discussion and Findings: Challenges and Tensions

- Open education
 - Static format of OER – constrains learner engagement, adaptability and personalisation
 - iOER addresses this, but brings challenges of digital access, institutional preparedness
 - Institutional capacity is a concern
 - Developing high-quality interactive material – Development expenses
 - Facilitator-related challenges
 - Ethical and privacy concerns
 - Need for professional development

Discussion and Findings: Challenges and Tensions



SDL

Over-reliance on AI - negative effect on learner autonomy and critical thinking,

Dependence of technology - cognitive overload

Delegate decision-making to algorithms



GenAI

Over-reliance

Reliability

- Hallucinations, inaccuracies, monotony of text, lack of cultural and linguistic specificity



Openness

Open –washing (tool said to be open, still restricted access and private profit)

Recommendations



GenAI-supported SDL and open education require various aspects



Importance of AI Literacy



Prompt engineering



Collaboration and quality assurance



Learners need support to use GenAI

Critical, responsible, purposeful



Ongoing feedback



Collaboration across disciplines and fields

Future Research



Current research - discipline-specific, small-scale, limited methodology



Larger samples, span disciplines, institutions, and educational contexts



Triangulating data with observations, longitudinal studies



Need for more context-sensitive work



Across education levels, disciplines, cultural contexts



Models that account for AI-mediated SDL in digitally unequal environments



Move beyond tool-adaption

Conclusion



GenAI can support SDL through:

feedback, explanations, resource discovery, learning planning



GenAI can support open education through:

revision, remixing, localisation and adaptation of OER



Some issues:

Over-reliance, inaccurate outputs, hallucinations, bias, academic integrity, weak contextualisation, licensing, attribution and quality assurance



GenAI can contribute to SDL in open education when used:

ethically, critically and in pedagogically sound ways



Value depends on:

AI literacy, facilitator guidance, institutional support, digital equity and quality assurance.



Future research - move beyond tool adoption

Examine use of GenAI in practice (diverse and digitally unequal contexts)

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Thank you

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