# GENERATIVE AI AND THE FUTURE OF NEEDS ANALYSIS IN LSP COURSE DESIGN

A systematic review of thirty-nine studies, 2020–2026

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# OUTLINE


01 Problem statement

02 Analytical framework

03 Methodology

04 Findings

05 Proposed model

06 Implications

# NEEDS ANALYSIS UNDER CONSTRAINT

01 **Weeks, not academic terms.** The syllabus is due before the cohort arrives.

02 **The designer is an outsider.** Not a member of the target discourse community.

03 **The empirical work is what gets cut.** And it is the part that tells you what learners need.

# THREE CRITERIA FOR A WARRANTED ANALYSIS

01 **Authenticity.** Data originate in the target situation. Munby 1978

02 **Triangulation.** Sources and methods converge. Long 2005

03 **Validation.** Confirmed by domain insiders. Dudley-Evans and St John 1998

**Without the third, a syllabus is plausible but not warranted.**

# SEVEN PRIOR REVIEWS

**01** Law (2024) · generative AI in language teaching

**02** L. Yan et al. (2024) · ethics, privacy, equity

**03** Lee et al. (2025) · 49 classroom studies

**04** Li et al. (2025) · empirical studies in L2 learning

**05** Wang et al. (2025) · 43 SSCI-indexed studies

**06** Shi et al. (2025) · 88 studies, education-wide

**07** H. Yan (2025) · 149 ESP studies, 2014–2023

**None on course design. None on needs analysis.**

# RESEARCH QUESTIONS

**RQ1.** Which applications are reported, 2020 to 2026?

**RQ2.** What accuracy, and what human validation, is documented?

**RQ3.** What model of practice do the findings support?

# RETRIEVAL UNDER PRISMA 2020

**Four databases.** Scopus, ScienceDirect, ERIC, Google Scholar.

**Sixteen search strings.** In Scopus alone, across two search dates.

**Window.** January 2020 to 3 September 2026.

**Recall before precision.** No standard terminology exists for design-stage work, so a narrow string under-retrieves.

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## INCLUDED, FROM 968 IDENTIFIED AND 763 SCREENED

# A LOPSIDED CORPUS

**01** Course and curriculum design: 11 studies

**02** Materials and task design: 11 studies

**03** Genre and discourse analysis: 7 studies

**04** Assessment specification: 5 studies

**05** Needs analysis: 5 studies, only 3 in language education

**Nothing before 2024: 3 in 2024, 8 in 2025, 28 in 2026**

# ANALYSING TEXTS RATHER THAN PEOPLE

## Yu (2025)

87% accurate against human coding

33% inconsistency between runs

CEO statements, double annotated

## Kim and Lu (2024)

92% accurate at move level

80% accurate at step level

Fine-tuning gain statistically significant

# AI-SIMULATED STAKEHOLDERS

## Why it appeals

Access is the binding constraint

A model answers as a ward nurse in one step

Practitioners report the account as credible

## What has been tested

No language-education study has run the comparison

Direct tests come from engineering and market research

Synthetic respondents vary sharply by subgroup

Ask a model about nurses and it describes nursing. A needs analysis exists because one hospital is not every hospital.

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Studies involving drafting, of thirty-nine

VALIDATION HAPPENS WHERE THERE IS SOMETHING TO CHECK AGAINST. A GENERATED NEEDS STATEMENT HAS NO PRIOR TEXT, ONLY A PERSON.

# A FOUR-PHASE HYBRID PROCEDURE

**Phase 0 · Governance.** Scope, ethical clearance, and a log of model and version.

**Phase 1 · Preparation.** Your own domain texts in; every prompt run more than once.

**Phase 2 · Validation, the gate.** Every item to a domain insider: confirm, amend or discard, and add what was left out.

**Phase 3 · Specification.** Provenance per item, prompts and model version archived.

# DIRECTIONS FOR RESEARCH

01 **Validation studies.** Compare simulated responses with the people they represent.

02 **Outcome studies.** Measure learner performance, not satisfaction.

03 **Reporting standards.** Model, version, date, prompts, runs, validation procedure.

**Apply the tool early, validate every item, document the procedure.**

# THANK YOU

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