



Low-achieving English learners in South Korea: A bibliometric analysis of research trends and the intellectual structure

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Lee, Je-Young, Sunhee Choi, Sodam Choi, and Young Hwang. 2026. Low-achieving English learners in South Korea: A bibliometric analysis of research trends and the intellectual structure. *Linguistic Research* 43(Special Edition): 211-257. This study provides a bibliometric analysis of research on low-achieving English learners in South Korea. A total of 177 peer-reviewed journal articles published between 2003 and 2026 were analyzed using performance indicators and science-mapping techniques, including co-authorship, author-keyword co-occurrence, direct citation, document co-citation, and bibliographic coupling analyses. The findings show that the field has developed from a small and intermittent body of research into a sustained and increasingly visible area of Korean English education. National educational research organizations and teacher-education institutions made prominent contributions, while specialist English education journals served as major publication outlets. Across the keyword and citation-based analyses, elementary-level literacy and remedial instruction emerged as the dominant intellectual core, particularly in relation to phonics, early reading, and differentiated support. More recent publications show greater visibility of minimum achievement standards, diagnostic assessment, teacher preparedness, and technology-assisted instruction. However, author and institutional collaboration remained fragmented, and research beyond elementary literacy was comparatively less central. The study concludes that future research should promote more collaborative, cross-level, and interdisciplinary approaches while extending the field to broader language domains, learner populations, and educational contexts. (Jeonju University)

Keywords low-achieving English learners, English underachievement, bibliometric analysis, English education, remedial instruction

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1. Introduction

Supporting learners who fail to attain basic levels of academic proficiency has become an important concern in educational research and practice. In English education, low achievement is particularly complex because it may reflect difficulties in foundational literacy (Kwon and Kim 2021; Kang et al. 2025), vocabulary/grammar (Yoo 2014; Jo and Kim 2025), reading comprehension (Shin and Kim 2025), learning strategies (Kim et al. 2015), affective engagement (Kang et al. 2023), or access to appropriate instruction (Dong and Chung 2020; Chang 2023). The literature uses terms such as underachievers, low-achieving learners, struggling learners, and students performing below basic proficiency. Although these categories are not conceptually identical, the present study uses low-achieving English learners as an inclusive term for learners experiencing persistent difficulty or failing to meet expected or minimum levels of English proficiency.

In South Korea, research on these learners has addressed diverse issues, including the characteristics and causes of English underachievement, foundational literacy, remedial and differentiated instruction, teacher perceptions, diagnostic assessment, and institutional support (An and Lim 2013; Lee 2014; Uhm and Kim 2014). More recent studies have extended this agenda to minimum achievement standards, in-depth diagnostic instruments, and digitally or AI-supported instruction (Lee et al. 2023; Heo 2024, 2025; Kang et al. 2025). These developments indicate that English underachievement is increasingly understood not only as an individual learning difficulty but also as an instructional, curricular, and institutional concern. However, the literature is dispersed across educational levels, journals, institutions, terminological traditions, and areas of learner support, making it difficult to understand its overall development and organization.

Previous meta-analyses have provided valuable evidence concerning the effectiveness of instruction for low-achieving English learners, particularly in elementary- and secondary-school settings (Lee and Chang 2017; Lee et al. 2017). Their principal focus, however, has been the magnitude and moderators of intervention effects. Field-level syntheses examining long-term publication development, major contributors, collaboration patterns, thematic change, and citation-based intellectual structure remain scarce. Consequently, the broader development of research on low-achieving English learners in South Korea has not been sufficiently examined as

an interconnected field of inquiry.

Bibliometric analysis can complement these effect-focused syntheses by addressing a different set of questions concerning publication development, scholarly collaboration, thematic relationships, and citation-based intellectual structure (Moral-Muñoz et al. 2020; Donthu et al. 2021). This approach is particularly appropriate for the South Korean context, where much of the relevant research has been published in domestic academic journals and is represented through both Korean- and English-language bibliographic metadata. A field-level bibliometric analysis can therefore clarify how this body of research has developed, which contributors and topics have shaped it, and how its publications are connected through collaboration and citation relationships.

Accordingly, the present study analyzes 177 peer-reviewed journal articles published between 2003 and 2026 to map the development and intellectual structure of research on low-achieving English learners in South Korea. It integrates performance analysis with co-authorship, keyword co-occurrence, direct citation, document co-citation, and bibliographic coupling analyses. Rather than evaluating the methodological quality of individual studies or estimating intervention effects, the study examines the extent to which this literature has developed into a cumulative and interconnected research field.

The following research questions guided the study:

1. How has research on low-achieving English learners in South Korea developed over time, and which authors, institutions, journals, and publications have made the most substantial contributions?
2. What patterns of author and institutional collaboration characterize the field?
3. What major themes and relative temporal patterns are revealed through author-keyword co-occurrence analysis?
4. How is the intellectual structure of the field organized through direct citation, document co-citation, and bibliographic coupling relationships?

2. Literature review

2.1 Conceptualizing low achievement in English education

Defining and conceptualizing learners who experience difficulties in learning English is essential for both empirical research and pedagogical intervention. In the Korean EFL literature, terms such as low achievement, underachievement, below basic proficiency, and struggling learners have often been used to describe students performing below expected levels (Lee 2014; Kim and Ku 2020). Although these terms overlap considerably in empirical research, they differ in their primary emphasis and operationalization. ‘Underachievement’ has traditionally referred to academic performance that falls below what would be expected on the basis of a learner’s assessed ability, prior achievement, or educational potential (Lau and Chan 2003; Kim et al. 2015; Dong and Chung 2020). Such discrepancies may be associated with affective, environmental, or instructional factors (Baek 2010; Park and Lee 2017). ‘Low achievement’ is a broader descriptive term referring to performance below a specified normative or criterion-referenced benchmark, regardless of whether a discrepancy between potential and actual achievement has been established (Kim and Park 2015; Park and Ko 2022). ‘Below basic proficiency’ is more closely associated with criterion-referenced assessment and educational policy, identifying learners who have not attained the minimum knowledge and skills expected at a particular grade or curriculum level (Cho et al. 2024). By comparison, ‘struggling learners’ or ‘struggling readers’ is a less formal and more classroom-oriented term that emphasizes continuing difficulty in engaging with instructional tasks or developing particular language and literacy skills (Lee et al. 2016; Kim 2022). These distinctions are analytically useful, but their boundaries are not always clearly maintained in actual research practice.

A further conceptual distinction concerns low achievement in English and specific learning disorders such as dyslexia, although the two may coexist. Low achievement in English that is not attributable to a specific learning disorder may be associated with accumulated learning gaps, inadequate instructional support, limited exposure to English, environmental disadvantage, or combinations of these factors (An and Lim 2013; Lee 2014). Dyslexia and related learning disabilities, by contrast, are associated with persistent difficulties in accurate or fluent word recognition, decoding, and spelling that cannot be explained solely by insufficient instruction or limited

learning opportunities (Park and Kim 2023; Kim 2026). In the Korean EFL context, where formal English instruction begins in elementary school, limited exposure to English print and insufficient opportunities to develop foundational literacy may produce reading profiles that overlap with observable reading difficulties (Kwon and Kim 2021). Identification should therefore be based on multiple sources of evidence rather than on a single English achievement score. Distinguishing accumulated L2 learning difficulties from specific reading disorders is particularly important because the two may require different forms and intensities of instructional support.

Operational criteria for identifying low-achieving English learners also vary substantially across empirical studies. Learners have been identified through norm-referenced achievement scores, curriculum-based minimum standards, specialized diagnostic assessments, and teacher judgment. Norm-referenced approaches classify learners according to their relative position within an achievement distribution, commonly using national assessments or standardized diagnostic tests (Kim and Park 2015; Kim et al. 2015). Criterion-referenced approaches determine whether learners have attained specified curriculum achievement standards or minimum performance levels (Park and Ko 2022; Cho et al. 2024). Diagnostic assessments, including national or regional diagnostic–remedial systems and specialized early-literacy instruments, provide more detailed information about particular areas of difficulty and are often used to identify students requiring targeted instructional support (Heo 2025; Kang et al. 2025). Teacher judgment adds classroom-based evidence concerning participation, learning behavior, task performance, and responses to instruction that may not be fully captured through formal assessments (Dong and Chung 2020; Kim and Shin 2026). These approaches reflect different purposes and assumptions; consequently, learners classified as low-achieving in one study may not necessarily meet the criteria used in another.

Contemporary scholarship therefore increasingly conceptualizes low achievement not as a single cognitive deficit but as a complex and dynamic phenomenon shaped by interactions among cognitive-linguistic, affective, instructional, and environmental factors (Kang et al. 2023; Kwak and Lee 2023). Difficulties in phonological awareness, letter–sound correspondence, word recognition, vocabulary, and grammar may constrain the development of English literacy and comprehension, particularly as instructional demands become more complex (Kwon and Kim 2021). Repeated learning difficulties may also be associated with reduced self-efficacy, anxiety,

frustration, and disengagement, which can further limit participation and effective strategy use (Lee 2014). These learner-level factors interact with curriculum pacing, assessment practices, limited differentiated instruction, unequal access to supplementary education, and differences in home support and exposure to English (Yang 2019; Do 2024). English underachievement is thus better understood as multidimensional and developmental, with its characteristics and contributing conditions potentially changing across learners, language domains, and educational stages.

In the present study, low-achieving English learners is used as an umbrella term for learners identified as underachieving, academically struggling, or performing below expected or basic levels of English proficiency. This usage does not assume that the categories are conceptually identical or that all learners experience the same types or causes of difficulty. Rather, it reflects the terminological and operational diversity of the literature. Studies using norm-referenced, criterion-referenced, diagnostic, or teacher-based identification were included when low achievement in English constituted a substantive focus of the research. Consistent with this inclusive approach, the review encompasses learners across elementary, secondary, and tertiary educational contexts while treating low-achieving English learners as a heterogeneous population requiring contextually appropriate forms of identification and support. These conceptual and operational distinctions therefore informed the scope of the present review. However, systematic comparison of how individual studies defined and identified low achievement was beyond the scope of the bibliometric analysis. The umbrella term was adopted to map a terminologically and operationally fragmented research conversation, rather than to assume that the included learner categories represented an identical psychometric construct.

2.2 Previous research syntheses and the complementary role for bibliometric mapping

Synthesizing findings from individual studies has contributed to the development of evidence-based knowledge concerning instruction for low-achieving English learners in South Korea. Since the early 2010s, several quantitative meta-analyses have examined the effectiveness of remedial instruction and other educational interventions (e.g.,

Jeong and Kim 2012; Kim et al. 2015). Early syntheses investigated the general characteristics of low-achieving learners and the overall effects of remedial teaching approaches (Jeong and Kim 2012). Subsequent studies examined instructional effects across particular educational stages. Lee and Chang (2017), for example, synthesized intervention studies conducted in elementary-school settings, while Lee et al. (2017) and Min and Min (2022) focused on secondary-school learners and examined whether instructional and methodological characteristics were associated with differences in linguistic and affective outcomes. More recent meta-analyses have addressed specific areas such as early literacy instruction, affective interventions, and reading instruction for struggling elementary learners (Jung and Choi 2019; Kang et al. 2023; Shin and Kim 2025).

These meta-analyses have provided valuable evidence concerning the average effects of instructional interventions and the conditions under which their outcomes may vary. Their primary purpose, however, has been to synthesize intervention effects on specified linguistic or affective outcomes rather than to examine the development and organization of the broader research field. Consequently, they provide limited information about long-term publication patterns, leading authors and institutions, scholarly collaboration, thematic changes, and the publications constituting the field's shared intellectual foundation. Moreover, these meta-analyses were designed to answer questions concerning average intervention effects and potential moderators rather than to map the organization of the broader research literature. They therefore address a different analytical purpose from the present study. Their focus on studies reporting quantifiable outcomes and sufficient statistical information reflects the requirements of effect-size synthesis rather than a general methodological deficiency. As a result, qualitative, diagnostic, policy-oriented, and other non-intervention studies generally fall outside their analytical scope, even though such studies may be important for understanding the development and organization of the research field.

Bibliometric analysis complements effect-focused synthesis by examining the productivity and relational organization of a research field (van Eck and Waltman 2010; Moral-Muñoz et al. 2020; Donthu et al. 2021). Performance indicators describe publication and citation patterns, while co-authorship and keyword co-occurrence analyses reveal collaborative and thematic relationships. Direct citation, document co-citation, and bibliographic coupling analyses further clarify how publications are connected through citation and shared-reference structures. These techniques permit

the examination of qualitative, diagnostic, policy-oriented, and other publications that may not provide the statistical information required for effect-size synthesis.

Nevertheless, bibliometric analysis has its own structural limitations. Citation counts are cumulative, database-dependent indicators of scholarly visibility rather than direct measures of methodological quality, theoretical validity, or intervention effectiveness. Older publications generally have had more time to accumulate citations, while database coverage and field-specific citation practices may also affect apparent citation prominence. Keyword frequencies, co-occurrence relationships, and network centrality similarly indicate the visibility and relational position of topics or publications within the assembled corpus, but they do not establish their educational importance or causal effectiveness. Bibliometric mapping should therefore be regarded as complementary to, rather than a substitute for, meta-analysis, systematic content analysis, and methodological quality appraisal.

Within these boundaries, the present study addresses a different but related set of questions by examining the long-term development, collaboration patterns, thematic organization, and citation-based intellectual structure of research on low-achieving English learners in South Korea.

3. Method

3.1 Data collection

The literature search was conducted between May and June 2026 using the Research Information Sharing Service (RISS), a major academic information database in South Korea. RISS provides access to scholarly publications across a wide range of disciplines and supports integrated searches of records available through major Korean academic databases and publication platforms. RISS served as the integrated discovery interface for identifying potentially relevant publications, whereas KCI was used primarily to obtain structured bibliographic metadata, citation counts, and forward-citation information where available. Because RISS integrates records supplied through several Korean publication platforms, separate database-by-database searches were not conducted.

No lower publication-year limit was imposed in the RISS search. All records

retrieved through the search were considered regardless of publication year and were screened according to the eligibility criteria described below. The year 2003 was not selected a priori on the basis of a policy change, institutional event, or database-coverage restriction; rather, it was the publication year of the earliest article that met the eligibility criteria.

To identify potentially relevant studies, search terms were developed in both English and Korean. The English-language search combined terms referring to low achievement with terms related to English language education: (“underachiev*” OR “low-achiev*” OR “basic academic”) AND (“English” OR “L2”). The Korean-language search used the following terms: (“부진*” OR “학습부진*” OR “저성취*” OR “기초학력*”) AND “영어.” The asterisk was used as a truncation operator, where supported, to retrieve variations of the relevant terms.

The review was restricted to journal articles to construct a more homogeneous bibliometric corpus with relatively consistent publication formats, bibliographic metadata, and citation practices, thereby improving the comparability of records used in the analysis (Donthu et al. 2021). This restriction also reduced the possibility that a graduate thesis and a substantively overlapping journal article derived from the same research would be treated as separate publications, as the inclusion of duplicate or overlapping reports can distort research synthesis and citation-based analysis (Choi et al. 2014). Although graduate theses and other forms of grey literature may provide valuable evidence, their publication processes, accessibility, and reporting and metadata conventions can differ substantially from those of journal articles (Adams et al. 2017). Their exclusion was therefore methodological rather than an assumption of lower research quality.

Studies were selected according to the inclusion and exclusion criteria presented in Table 1.

Table 1. Inclusion and exclusion criteria

Area	Inclusion criteria	Exclusion criteria
Research context	Studies conducted within the South Korean English education context	Studies conducted exclusively with learners outside South Korea
Research participants	Learners identified as low-achieving, underachieving, academically struggling, or below basic proficiency in English	Studies involving only general English learners without a distinct low-achieving group

Research focus	Studies examining the characteristics, causes, identification, diagnosis, instruction, support, or intervention associated with low achievement in English	Studies in which English achievement was used only as an outcome variable without a substantive focus on low-achieving learners
Publication type	Peer-reviewed journal articles	Graduate theses and dissertations, conference papers or presentations, and other non-journal publications
Language	Publications written in Korean or English	Publications written in languages other than Korean or English

The study selection process is summarized in Figure 1. The initial database search yielded 488 records. After 166 duplicate records had been removed, 322 unique records remained. Two reviewers independently screened the titles and abstracts of all 322 records according to the predetermined eligibility criteria presented in Table 1. When eligibility could not be determined from the title and abstract alone, the full text was consulted. The reviewers initially agreed on the eligibility decisions for 308 of the 322 records and disagreed on 14, yielding a percentage agreement of 95.7%. Most disagreements concerned studies that examined low achievement across English and other school subjects (e.g., Jung 2013; An 2019; Han et al. 2025). Such studies were included only when English-related low achievement constituted a distinct substantive focus or when English-specific data or findings could be separately identified. Studies in which English formed an undifferentiated component of general academic underachievement were excluded. The 14 disagreements were resolved through discussion and consensus after consultation of the full texts.

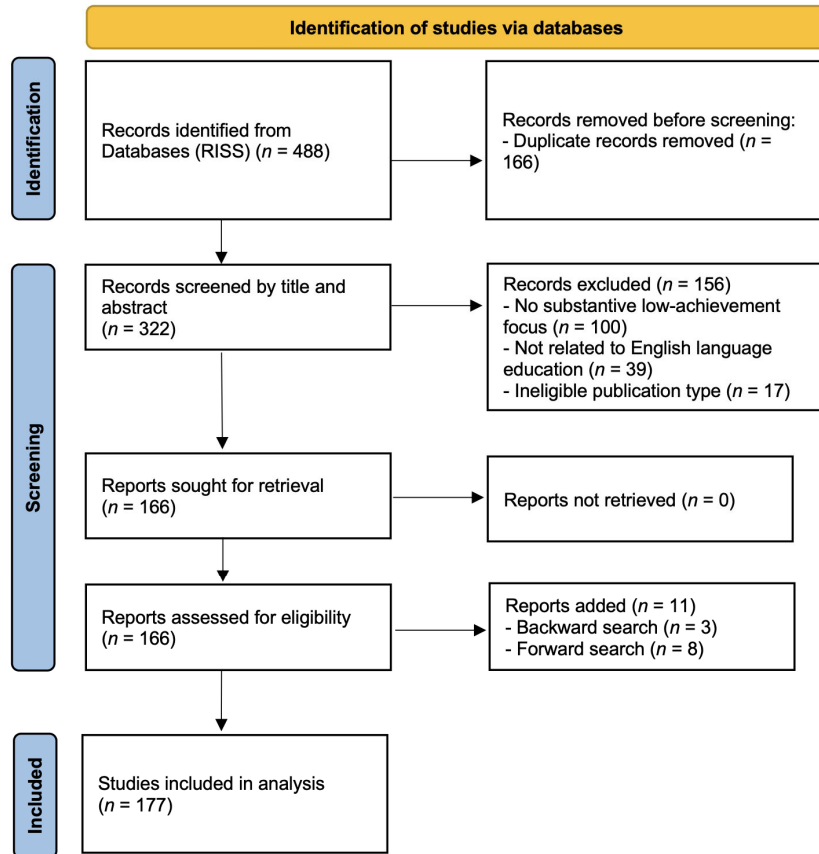


Figure 1. PRISMA flow diagram

Following this screening process, 39 records unrelated to English education were excluded. An additional 100 records addressed English education but did not substantively focus on low-achieving English learners, English learning underachievement, or basic English proficiency. Seventeen records were excluded because they were not peer-reviewed journal articles, including conference presentations, editorials, and other ineligible document types. Consequently, 166 journal articles met the eligibility criteria through the database search.

Supplementary citation searching was subsequently conducted to improve the comprehensiveness of the dataset. For the backward citation search, the reference lists of all 166 eligible articles were examined in their entirety, resulting in the identification

of three additional articles. Forward citation searching was conducted through the Korea Citation Index (KCI) to identify subsequent publications that had cited the eligible articles. This procedure yielded eight additional articles. The 11 articles identified through backward and forward citation searching were assessed using the same inclusion and exclusion criteria applied to the database search. All 11 met the eligibility criteria and were added to the dataset. Consequently, a total of 177 peer-reviewed journal articles were included in the final systematic review and bibliometric analysis.

3.2 Procedure and instruments

3.2.1 Metadata extraction and standardization

The bibliographic metadata of the 177 articles included in the review were primarily obtained by exporting records from the KCI and organizing them in Microsoft Excel. Because exportable KCI metadata were unavailable for articles published before 2004 and for articles appearing in journals not covered by KCI, the bibliographic information for these articles was extracted manually from the original publications and entered into the same Excel dataset. All records were subsequently checked for completeness and consistency before the bibliometric analysis.

Eight metadata fields were collected for each article: AU (author[s]), CI (author affiliation), TI (title), SO (source title), DE (author keywords), PY (publication year), CR (cited references), and TC (times cited). These fields provided the bibliographic information required for the performance and science-mapping analyses conducted in this study: authorship and affiliation data supported author- and institution-level analyses, author keywords were used for co-occurrence analysis, and cited-reference and citation data were used for citation-based analyses (Moral-Muñoz et al. 2020; Donthu et al. 2021).

A major challenge in analyzing research published in South Korea was the coexistence of Korean- and English-language metadata (Lee 2025, 2026). Conceptually equivalent terms written in different languages are normally treated as separate items by bibliometric software. For example, the Korean term ‘부진아’ and the English term ‘underachiever’ may refer to the same concept but would be counted as distinct

keywords unless they were standardized. A similar problem arose in the cited-reference data. The same Korean-language article may be cited in Korean in the reference list of a Korean-language publication but represented by its English title in the reference list of an English-language publication.

To address this problem, Korean-language metadata were converted into English-language forms. For article titles, journal titles, and author keywords, the official English form provided in the original publication was given first priority. When no official English form appeared in the publication, the journal's official website and KCI metadata were consulted in that order. For institutional affiliations, the official English form in the original publication or on the institution's official website was preferred, followed by the KCI record. Researcher-generated translations were used only when no official English form could be verified. If official sources provided different English forms, the form appearing in the original publication was retained and the discrepancy was documented.

For cited references, a DOI was used as the primary matching identifier when available. When no DOI was available, Korean- and English-language references were treated as the same publication only after cross-checking the author name(s), publication year, article title, source title, and available volume, issue, and page information. Ambiguous cases were checked directly against the original cited publication.

3.2.2 Author-name disambiguation

Author-name disambiguation was conducted before network analysis. In bibliometric research, disambiguation refers to the process of determining whether different representations of a name refer to the same individual and whether identical or similar name forms actually refer to different individuals. Failure to distinguish between such cases can merge the publication records of different researchers or divide the work of one researcher across multiple author entries, thereby distorting measures of author productivity, collaboration, and citation influence (Strotmann and Zhao 2012).

This issue was particularly important for Korean author names because different full given names can produce identical initials in bibliographic records. For example, Ji Young Kim and Jung Yong Kim are different authors, but both may be abbreviated as Kim, J. Y. in reference lists. Additional variation may arise from differences in

spacing, hyphenation, and Romanization, such as Jiyoung Kim, Ji-Young Kim, and Ji Young Kim. Conversely, the same author may be represented by different name forms. For instance, publications by I. S. P. Nation may appear under either Nation, P. or Nation, I. S. P., causing bibliometric software to treat the two forms as different authors. To minimize these problems, the full names of the authors were individually reviewed and assigned standardized name forms. Author entries and cited-reference records were then revised consistently so that distinct authors were not merged solely because they shared the same surname and initials. At the same time, variant name forms referring to the same author were consolidated under a single standardized form.

3.2.3 Keyword harmonization

A thesaurus file was created to improve the accuracy of the author-keyword co-occurrence analysis. The thesaurus was used to merge keywords that represented the same or substantially equivalent concepts but differed because of language, terminology, spelling, punctuation, spacing, hyphenation, or grammatical form. For example, ‘elementary English’ and ‘primary English’ were standardized as ‘elementary English’. Similarly, ‘low-achieving students’ and ‘low achieving students’ were treated as a single keyword rather than two separate items.

The keyword-cleaning process also involved checking synonymous expressions and closely related variants that would otherwise fragment the frequency and network position of a concept. The standardized term was selected on the basis of its conceptual clarity and consistency with terminology commonly used in English-language educational research. The resulting thesaurus file was applied during the VOSviewer analysis so that equivalent terms were merged before keyword frequencies, links, and clusters were calculated.

3.2.4 Bibliometric analysis and visualization

The bibliometric analysis and network visualization were conducted using VOSviewer version 1.6.19. VOSviewer is a software tool designed to construct, analyze, and visualize bibliometric networks (van Eck and Waltman 2010). It can be used to examine relationships among authors, institutions, publications, journals, cited

references, and keywords through analyses such as co-authorship, keyword co-occurrence, citation analysis, bibliographic coupling, and co-citation analysis.

VOSviewer represents bibliometric items as nodes and their relationships as links. The size of a node generally reflects the weight of an item, such as its number of publications, occurrences, or citations, whereas the thickness or strength of a link indicates the degree of association between two items (van Eck and Waltman 2010). The software also applies mapping and clustering techniques to position closely related items near one another and organize them into groups that represent major research communities, themes, or intellectual foundations.

3.3 Analysis

The analysis combined descriptive bibliometric indicators with relational network techniques to investigate how research on low-achieving English learners in South Korea has developed and how its scholarly knowledge base is organized. Following the distinction proposed in the bibliometric literature, the analytical framework consisted of performance analysis and science mapping (Moral-Muñoz et al. 2020; Donthu et al. 2021).

Performance analysis was conducted to assess research productivity and scholarly influence at the level of authors, institutions, journals, and individual publications. Productivity was measured primarily by publication frequency, whereas research influence was examined using citation counts recorded in the TC (Times Cited) field of the KCI metadata. Author- and institution-level outputs were calculated using both full and fractional counting. Under full counting, each author or institution received one complete credit for a co-authored publication. Under fractional counting, the credit for each publication was divided among the contributing authors or institutions. Reporting both measures made it possible to distinguish overall participation in research production from proportional contribution within collaborative publications.

Science mapping was employed to examine relationships among bibliometric entities and to identify the social, conceptual, and intellectual organization of the field. All science-mapping networks were constructed and visualized using VOSviewer version 1.6.19. Full counting was used for all network types for which a counting-method option was available. Link strengths were normalized using the association-strength method for mapping and clustering. The clustering resolution was

set to 1.00, and the minimum cluster size was set to 1. The minimum cluster size of 1 was retained so that isolated nodes and small peripheral groupings, particularly in the collaboration networks, were not automatically discarded. All other layout and clustering parameters were retained at the VOSviewer default settings.

Five network-based analyses were undertaken. First, co-authorship analysis was used to examine patterns of collaboration among researchers and to identify relatively cohesive or disconnected author groups. Second, author-keyword co-occurrence analysis was conducted to determine the principal themes of the field and the extent to which particular topics were associated with one another. The standardized keyword data described in Section 3.2 were used in this analysis so that synonymous and formally variant expressions were counted as the same concept. Third, direct citation analysis was performed at the document level. This analysis identified links between articles in the dataset when one publication cited another and was used to locate groups of studies connected through direct scholarly influence (Donthu et al. 2021). Fourth, document co-citation analysis was conducted to identify publications that were frequently cited together in the reference lists of the articles included in the review. Frequently co-cited publications were interpreted as sharing theoretical, conceptual, or methodological relevance and were used to identify the principal intellectual foundations underlying research on low-achieving English learners in South Korea (Donthu et al. 2021). Fifth, bibliographic coupling analysis was performed at the document level. Two articles were bibliographically coupled when they cited one or more references in common, with stronger coupling indicating greater overlap between their knowledge bases. This analysis was used to examine shared reference patterns and the organization of knowledge bases among relatively well-cited publications within the field (Donthu et al. 2021).

Minimum inclusion thresholds were applied as pragmatic criteria for network interpretability rather than as statistical-significance or research-quality cutoffs. Because the analyses involved different units of analysis and substantially different frequency distributions, a single numerical threshold was not applied across all network types. For each analysis, the distribution of the relevant item weight—such as publication count, keyword occurrence, or citation frequency—was inspected, and one threshold was selected to produce a visually interpretable network containing approximately 50 items or fewer. This procedure was used solely to select the final inclusion threshold for each network and did not constitute a formal sensitivity

analysis. The number or substantive composition of clusters was not used as a criterion for threshold selection, and all items meeting the final threshold were retained.

Cluster membership was generated algorithmically by VOSviewer on the basis of network relationships, whereas the substantive interpretation and labeling of the clusters were conducted separately by the researchers. Four researchers jointly reviewed the items assigned to each cluster and the titles and abstracts of the publications associated with them. For the keyword co-occurrence analysis, a publication was treated as associated with a cluster when its author-keyword list contained at least one keyword assigned to that cluster. For the direct-citation and bibliographic-coupling analyses, the titles and abstracts of all publications assigned to each cluster were reviewed. The researchers considered the shared research purposes, participant groups and educational levels, language domains, instructional approaches, and, where explicitly reported, theoretical or methodological orientations of the publications. Potential cluster labels were discussed among the four researchers. When initial interpretations differed, the relevant cluster items and the titles and abstracts of the associated publications were re-examined until consensus was reached. The resulting labels should therefore be understood as researcher-generated descriptive interpretations of algorithmically produced clusters rather than as substantive categories generated by VOSviewer.

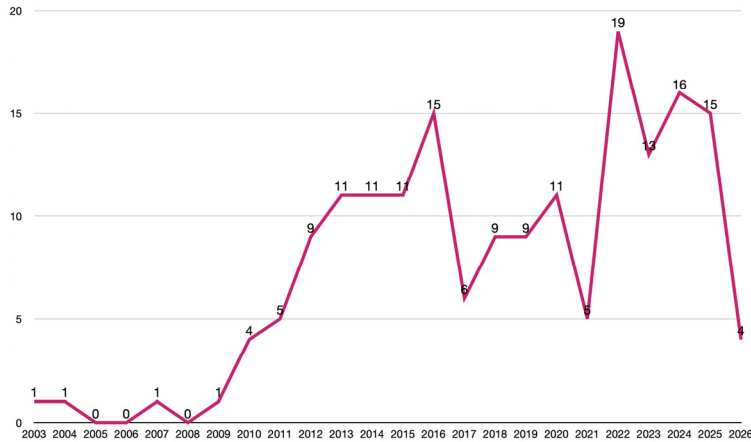
4. Results

4.1 Annual publication trends

Figure 2 presents the annual distribution of the 177 articles published between 2003 and 2026. Research on low-achieving English learners in South Korea was limited during the initial period. Only four articles were published between 2003 and 2009, and no eligible publications were identified in 2005, 2006, or 2008.

Publication activity began to increase in 2010, when four articles were published. The annual output subsequently rose from five articles in 2011 to nine in 2012 and remained relatively stable at 11 articles per year between 2013 and 2015. The number reached 15 in 2016, the highest annual output recorded up to that point. Overall, 66 articles were published between 2010 and 2016, accounting for 37.3% of the total

dataset.



Note: The year 2003 was the publication year of the earliest eligible article. The 2026 count includes publications identified only up to the search cutoff in June 2026.

Figure 2. Annual number of publications (2003-2026)

The annual output fluctuated during the subsequent five-year period. It declined to six articles in 2017, increased to nine in both 2018 and 2019, and reached 11 in 2020 before falling to five in 2021. A renewed increase was observed from 2022 onward. The number of publications peaked at 19 in 2022, followed by 13 in 2023, 16 in 2024, and 15 in 2025. The 63 articles published between 2022 and 2025 represented 35.6% of all articles included in the analysis, with an average of 15.75 publications per year during this period.

Four articles were published in 2026. However, because the literature search was completed between May and June 2026, the figure for 2026 represents only a partial publication year and should not be directly compared with the totals for preceding full years.

Overall, the annual publication pattern shows a clear long-term expansion of research on low-achieving English learners in South Korea despite year-to-year fluctuations, with particularly active periods observed between 2010 and 2016 and again from 2022 onward.

4.2 Productive authors and institutions

Table 2 presents the ten most productive authors in research on low-achieving English learners in South Korea. Based on full counting, Kyungsuk Chang and Jiyoung Bae were the most productive authors, with seven publications each. Hyoung-Sook Cho, Jungjin Kang, Jeong-ryeol Kim, and Bokyoung Cho followed, each contributing six publications. So-young Jeong authored five publications, while Hye-Jung Heo, Do Seon Eur, and Kiljoo Woo each contributed four.

The fractional-counting results produced a somewhat different ordering because publication credit was divided among co-authors. Hyoung-Sook Cho and So-young Jeong recorded the highest fractional publication counts, with 5.00 each, followed by Hye-Jung Heo with 4.00. Kyungsuk Chang and Jungjin Kang recorded fractional counts of 3.80 and 3.67, respectively, while Do Seon Eur and Kiljoo Woo each recorded 3.50. Jiyoung Bae had a fractional count of 3.00, followed by Jeong-ryeol Kim with 2.83 and Bokyoung Cho with 2.00. The differences between the full- and fractional-counting results indicate variation in the extent to which the authors' publication output involved co-authorship. In particular, authors whose rankings remained relatively high under fractional counting contributed a larger proportional share to their publications.

Table 2. Ten most productive authors

Rank	Name	Full Counting	Fractional Counting
1	Chang, Kyungsuk	7	3.80
2	Bae, Jiyoung	7	3.00
3	Cho, Hyoung-Sook	6	5.00
4	Kang, Jungjin	6	3.67
5	Kim, Jeong-ryeol	6	2.83
6	Cho, Bokyoung	6	2.00
7	Jeong, So-young	5	5.00
8	Heo, Hye-Jung	4	4.00
9	Eur, Do Seon	4	3.50
-	Woo, Kiljoo	4	3.50

Table 3 presents the ten most productive institutions. The Korea Institute for Curriculum and Evaluation ranked first under both counting methods, with 26

publications under full counting and a fractional count of 13.09. The Korea National University of Education followed with 17 publications and a fractional count of 8.49. Kongju National University ranked third under full counting with 15 publications, followed by Gyeongin National University of Education with 13 and Chungbuk National University with 10.

Table 3. Ten most productive institutions

Rank	Name	Full Counting	Fractional Counting
1	Korea Institute for Curriculum and Evaluation	26	13.09
2	Korea National University of Education	17	8.49
3	Kongju National University	15	5.80
4	Gyeongin National University of Education	13	7.16
5	Chungbuk National University	10	4.83
6	Korea University	9	8.00
7	Ewha Womans University	9	3.33
8	Seoul National University of Education	8	4.33
9	Busan National University of Education	7	4.83
10	Gyeongsang National University	7	2.50

Differences between the two counting methods were also evident at the institutional level. Korea University recorded nine publications under full counting and a relatively high fractional count of 8.00, placing it third under fractional counting. Gyeongin National University of Education retained a fractional count of 7.16 from its 13 publications, while Kongju National University recorded a fractional count of 5.80. By comparison, Ewha Womans University produced nine publications under full counting but recorded a fractional count of 3.33. Gyeongsang National University similarly recorded seven publications under full counting and a fractional count of 2.50. These differences reflect variation in the extent to which institutional research output was produced independently or through collaboration with researchers affiliated with other institutions.

Overall, the results demonstrate the prominent contribution of national educational research organizations and teacher-education institutions to this field. The Korea Institute for Curriculum and Evaluation was the leading institutional contributor, while national universities of education and other teacher-training institutions accounted for several of the highest positions in both the full- and fractional-counting rankings.

4.3 Influential journals and articles

Table 4 presents the journals that published the largest numbers of articles on low-achieving English learners in South Korea. *Primary English Education* was the leading publication outlet, with 24 articles, accounting for 13.6% of the 177 publications included in the dataset. The *Journal of the Korea English Education Society* ranked second with 11 articles, followed by *English Language Teaching* with nine and *Secondary English Education* with eight. Together, these four journals published 52 articles, representing 29.4% of the dataset.

The Journal of Learner-Centered Curriculum and Instruction published seven articles, while the *Journal of Research in Curriculum & Instruction* and *Studies in English Education* each published six. *The Journal of Educational Development* contributed five articles. Four additional journals—*English Language & Literature Teaching*, *Foreign Languages Education*, *Journal of Language Sciences*, and the *Korean Journal of English Language and Linguistics*—each published four articles. Collectively, these 12 journals accounted for 92 articles, or 52.0% of the dataset. The findings indicate that research in this area was disseminated primarily through journals specializing in English language education, although studies also appeared in journals addressing curriculum and instruction, educational development, and linguistics.

Table 4. Leading journals

Rank	Publication Titles	Record Count	KCI IF (5 years)
1	<i>Primary English Education</i>	24	1.15
2	<i>Journal of the Korea English Education Society</i>	11	1.75
3	<i>English Language Teaching</i>	9	0.52
4	<i>Secondary English Education</i>	8	1.10
5	<i>The Journal of Learner-Centered Curriculum and Instruction</i>	7	NA
6	<i>Journal of Research in Curriculum & Instruction</i>	6	1.43
-	<i>Studies in English Education</i>	6	0.77
7	<i>The Journal of Educational Development</i>	5	1.11
8	<i>English Language & Literature Teaching</i>	4	0.91
-	<i>Foreign Languages Education</i>	4	1.02
-	<i>Journal of Language Sciences</i>	4	0.29
-	<i>Korean Journal of English Language and Linguistics</i>	4	0.54

Table 5 presents the eight articles with the highest KCI citation counts. Lee (2014)

was the most frequently cited article, with 58 citations, followed by Kwon and Kim (2012) with 36 citations and Kim and Jeong (2010) with 31 citations. Kwak et al. (2016) received 29 citations, while Uhm and Kim (2014), Lee and Chang (2017), Lee and Ihm (2012), and Choi and Ahn (2015) each received 28 citations.

Based on their titles and author keywords, these articles broadly addressed literacy- and reading-oriented instruction (Kwon and Kim 2012; Lee and Ihm 2012; Uhm and Kim 2014), the causes and contextual factors associated with low achievement (Lee 2014; Kwak et al. 2016), technology-enhanced interventions (Kim and Jeong 2010; Choi and Ahn 2015), and research synthesis (Lee and Chang 2017). Literacy- and reading-oriented instruction was the most frequently represented theme among the highly cited articles. Three of the eight articles appeared in *Primary English Education*, while two were published in *Foreign Languages Education*. The remaining three articles were distributed across other journals in English education, curriculum, and educational research.

Table 5. Most cited articles

Authors	Article Title	Source Title	No. of Citations
Lee (2014)	An investigation into the low achievers of primary English learning: Causes and countermeasures	<i>Primary English Education</i>	58
Kwon and Kim (2012)	A study of teaching literacy to primary school English underachievers based on patterned storybooks	<i>Foreign Languages Education</i>	36
Kim and Jeong (2010)	Development of a blended learning model for teaching lower leveled students in elementary English education	<i>Primary English Education</i>	31
Kwak et al. (2016)	School-level factors on the school academic achievement: Focusing on comparison of the factors on the ratio of high-achievement and under-achievement	<i>The Journal of Curriculum and Evaluation</i>	29
Uhm and Kim (2014)	The effect of strategies-based leveled English reading programs on reading proficiency and affective domains of underachieving elementary school students	<i>Foreign Languages Education</i>	28
Lee and Chang (2017)	Effects of English language instruction for underachievers in the elementary school: A meta-analysis	<i>Primary English Education</i>	28

Lee and Ihm (2012)	A study of the effect of learning strategy based early reading instruction for underachieving students	<i>English Language & Literature Teaching</i>	28
Choi and Ahn (2015)	A case study of using smartphone applications for elementary English underachievers' vocabulary learning	<i>Modern Studies in English Language & Literature</i>	28

4.4 Author and institutional collaboration networks

Figures 3 and 4 present the co-authorship networks at the author and institutional levels, respectively. The author-level network contained 20 authors distributed across 16 clusters, indicating a highly fragmented collaboration structure. Only two clusters included more than one author, while the remaining 14 clusters consisted of single authors without links to other authors retained in the network.

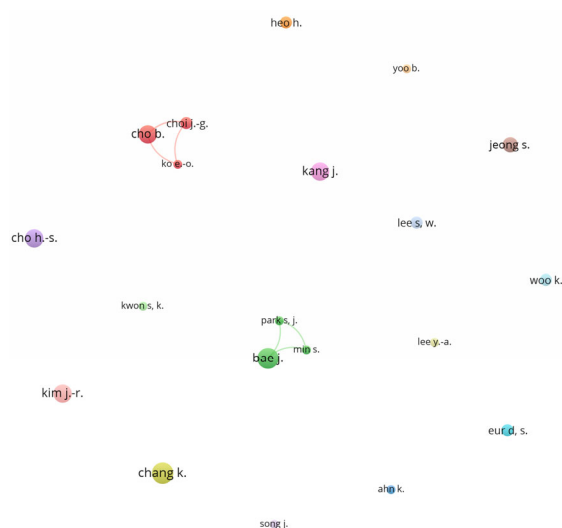


Figure 3. Author co-authorship network

The first collaborative cluster consisted of Cho B., Choi J.-G., and Ko E.-O. The strongest link within this cluster was observed between Cho B. and Choi J.-G., with a link strength of 4, while the links between Cho B. and Ko E.-O. and between Choi J.-G. and Ko E.-O. each had a strength of 3. Cho B. and Choi J.-G. each recorded a total link strength of 7, while Ko E.-O. had a total link strength of 6.

The second collaborative cluster comprised Bae J., Min S., and Park S.-J. Each pair of authors was connected with a link strength of 3, resulting in a total link strength of 6 for each author. Bae J. had seven publications, whereas Min S. and Park S.-J. each had three publications in the dataset.

The institutional collaboration network was also limited in size. Four institutions were retained in the network and organized into two clusters. The Korea Institute for Curriculum and Evaluation occupied the most central position, with 21 publications, three institutional links, and a total link strength of 8. It was connected to Wonmyeong Elementary School, Chinju National University of Education, and Chuncheon National University of Education.

The strongest institutional relationship was observed between the Korea Institute for Curriculum and Evaluation and Wonmyeong Elementary School, with a link strength of 4. The Korea Institute for Curriculum and Evaluation was also linked to Chinju National University of Education and Chuncheon National University of Education, with a link strength of 2 in each case. An additional connection of the same strength was identified between Chuncheon National University of Education and Wonmyeong Elementary School.



Figure 4. Institutional co-authorship network

Overall, the author and institutional maps revealed that collaboration was concentrated within a small number of closely connected groups. Most productive authors included in the author network were not connected to other threshold-eligible authors, while the institutional network was organized around the Korea Institute for Curriculum and Evaluation as its principal connecting hub.

4.5 Keyword co-occurrence and thematic structure

Figure 5 presents the author-keyword co-occurrence network. Following keyword harmonization, the dataset contained 439 unique author keywords before thresholding.

Of these, 32 met the minimum occurrence threshold of four and were retained in the network. The retained keywords were organized into six clusters: Cluster 1 contained eight items, Cluster 2 seven, Cluster 3 five, and Clusters 4–6 four items each.

‘English underachievers’ was the most frequently occurring keyword, with 49 occurrences, 18 links, and a total link strength of 35. The more general term ‘underachievers’ occurred 36 times and occupied the most highly connected position in the network, with 19 links and the highest total link strength of 45. Other prominent keywords included ‘basic academic ability’ (20 occurrences; total link strength = 27) and ‘elementary English’ (18 occurrences; total link strength = 25).

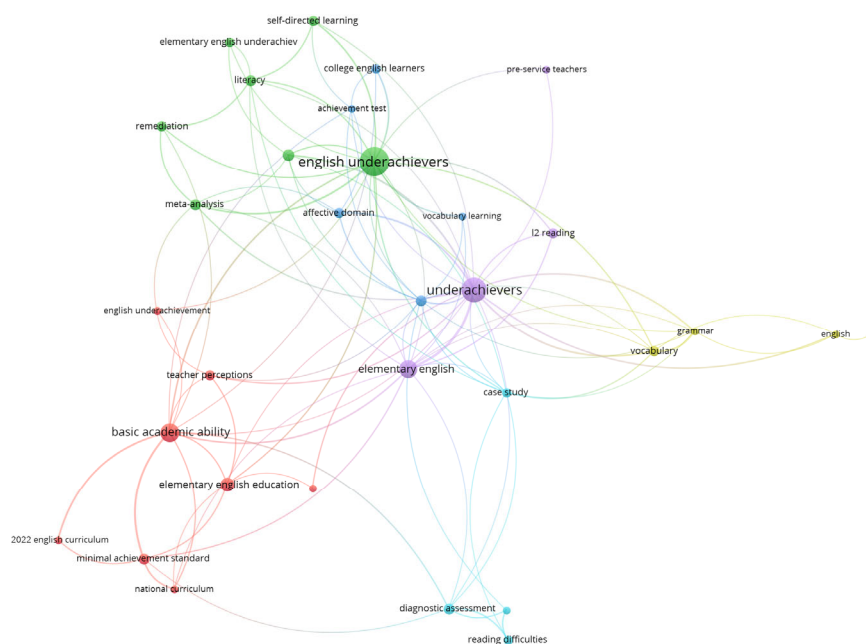


Figure 5. Keyword co-occurrence network

Cluster 1 centered on curriculum, minimum achievement standards, and basic academic support, incorporating such terms as ‘basic academic ability’, ‘minimal achievement standard’, ‘national curriculum’, ‘2022 English curriculum’, and ‘teacher perceptions’. Cluster 2 primarily represented literacy-oriented remediation for English

underachievers, including ‘phonics’, ‘literacy’, ‘remediation’, ‘self-directed learning’, and ‘elementary English underachievers’.

Cluster 3 combined assessment, affective factors, and language-learning outcomes through keywords such as ‘achievement test’, ‘affective domain’, ‘college English learners’, ‘reading comprehension’, and ‘vocabulary learning’. Cluster 4 focused on linguistic components associated with underachievement, particularly ‘grammar’ and ‘vocabulary’. Cluster 5 linked the general concept of underachievers with ‘elementary English’, ‘L2 reading’, and ‘pre-service teachers’. Cluster 6 was characterized by diagnostic and reading-related concerns, comprising diagnostic assessment, case study, reading competency, and reading difficulties.

The strongest pairwise association was observed between ‘elementary English’ and ‘underachievers’, with a link strength of 8. This was followed by the relationship between ‘basic academic ability’ and ‘minimal achievement standard’, with a link strength of 5. These relationships reflect the central positions of elementary-school contexts and achievement-standard terminology within the network.

The average-publication-year scores also indicated temporal differences across themes. Earlier topics included ‘literacy’ (2012.57), ‘remediation’ (2014.00), ‘achievement test’ (2014.50), and ‘reading comprehension’ (2015.43). More recent keywords included ‘teacher perceptions’ (2021.00), ‘national curriculum’ (2021.25), ‘diagnostic assessment’ (2021.86), ‘basic academic ability’ (2022.70), ‘minimal achievement standard’ (2024.14), and ‘2022 English curriculum’ (2024.50). The average-publication-year pattern indicates that curriculum-based achievement standards, diagnostic support, and teacher perspectives were more visible among recently published studies, while literacy and remedial instruction remained established themes.

4.6 Direct citation analysis

Figure 6 presents the direct citation network of the articles included in the review. A minimum citation threshold of five was applied, resulting in the inclusion of 49 of the 177 articles. These publications formed 10 clusters connected through 130 direct citation links within the review corpus. In this network, a link indicates that one included article directly cited another included article.

Lee (2014) occupied the most central position in the network, with 24 direct citation links and 58 KCI citations. The article was connected to publications across several clusters, indicating its broad association with subsequent research in the field. Lee and Ihm (2012) and Jeong and Kim (2013) each had 15 links, with 28 and 27 citations, respectively. Lee and Chang (2017) followed with 14 links and 28 citations, while Seo and Bae (2015) and An and Lim (2013) recorded 13 and 12 links, respectively.

The largest cluster, Cluster 1, comprised nine publications and was primarily associated with elementary-level literacy development, early reading instruction, phonics, self-directed or self-regulated learning, and instructional synthesis. Its most highly connected publications were Lee and Ihm (2012), Lee and Chang (2017), and Seo and Bae (2015). Cluster 2 contained eight publications addressing the causes of English underachievement and a range of literacy interventions, including decodable books, phonics, slow reading, pictorial typography, smartphone applications, and AI-supported instruction.

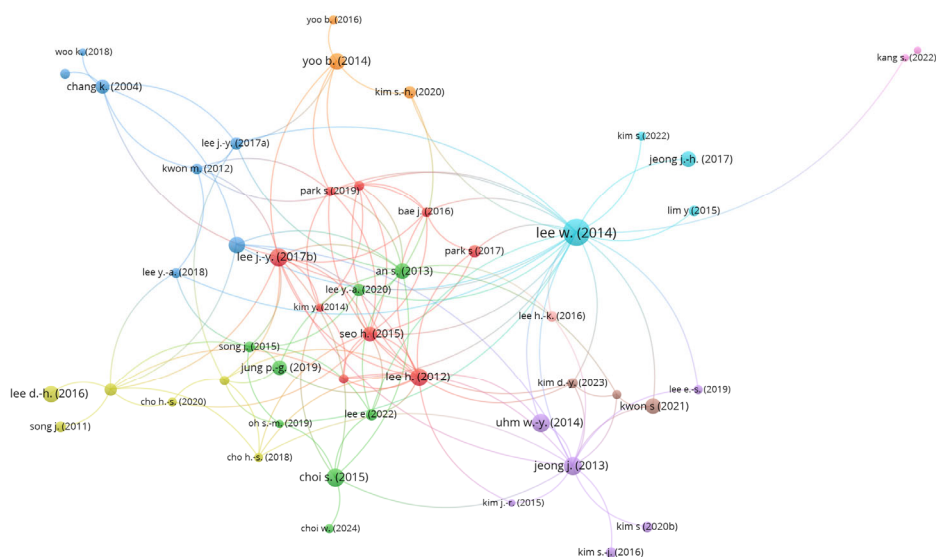


Figure 6. Direct citation network

Cluster 3 consisted of seven publications concerned mainly with the diagnosis of reading difficulties, instructional materials, patterned-storybook reading, and

reading interventions. Cluster 4 included six studies related to mentoring, teacher preparation, reading instruction, and flipped learning. Cluster 5 also contained six publications and incorporated studies of strategy-based reading, phonemic awareness, multiple-intelligence-based instruction, school-level underachievement, and meta-analytic research on instructional effects.

The remaining five clusters were smaller. Cluster 6 was organized around Lee (2014) and included research on the causes and countermeasures of underachievement, teacher perceptions, vocabulary intervention, and early reading programs. Cluster 7 addressed middle-school underachievement, particularly vocabulary and grammar learning and teachers' instructional preparedness. Cluster 8 included longitudinal and action-oriented research on the development and instruction of underachieving learners across different school levels. Cluster 9 comprised two recent publications concerning elementary-school teacher perceptions and the use of an AI translator, whereas Cluster 10 consisted of a survey of teacher perceptions and instructional strategies.

Overall, the direct citation network was centered predominantly on elementary English literacy, reading intervention, and the causes and instructional treatment of English underachievement. Publications addressing teacher perceptions, secondary-school learners, and technology-assisted instruction formed smaller and more peripheral strands within the network.

4.7 Co-citation networks

Figure 7 presents the document co-citation network, which was constructed to identify publications frequently cited together by the articles included in the review. Following cited-reference matching and standardization, the dataset contained 2,381 unique cited references before thresholding. Of these, 23 were cited at least nine times within the review corpus and were retained in the network, where they were organized into three clusters. Most retained documents were connected to between 19 and 22 other documents, indicating a densely interconnected journal-based intellectual structure.

Lee (2014) occupied the most central position in the network, receiving 41 citations within the review corpus and recording the highest total link strength of 209. It was followed by Uhm and Kim (2014), with 26 citations and a total link strength of 175;

Cluster 3 consisted of six publications and was more specifically oriented toward literacy and reading remediation. The studies in this cluster addressed patterned storybooks, early reading strategies, cross-age reading, phonics, self-directed learning, and strategy-based leveled reading instruction. Uhm and Kim (2014) was the most central publication in this cluster, followed by Lee and Ihm (2012), Seo and Bae (2015), and Kwon and Kim (2012).

The strongest individual co-citation relationship was found between Lee (2014) and Uhm and Kim (2014), with a link strength of 20. The relationship between An and Lim (2013) and Lee (2014) was the second strongest, with a link strength of 16. Lee (2014) was also strongly co-cited with several major literacy- and instruction-oriented studies, demonstrating its bridging position between research on the causes of English underachievement and research on remedial intervention.

Overall, the co-citation analysis identified three principal components of the field's journal-based intellectual foundation: research on the causes and development of English underachievement, research on instructional support for elementary-level underachievers, and research on literacy- and reading-focused remediation.

4.8 Bibliographic coupling

Figure 8 presents the document-level bibliographic coupling network of relatively well-cited publications. A preliminary no-threshold analysis retained 163 of the 177 articles but produced a network whose visual complexity substantially limited meaningful cluster-level interpretation. A minimum KCI citation count of 10 was therefore applied as a pragmatic inclusion criterion, resulting in the retention of 42 articles. The retained publications were organized algorithmically into nine clusters. Because the selection criterion was based on accumulated citations, the network should be interpreted as representing shared reference patterns among relatively well-cited publications rather than as a comprehensive map of current or emerging research across the entire corpus. In this analysis, two articles were linked when they cited one or more references in common; stronger links therefore indicated greater overlap between their cited knowledge bases.

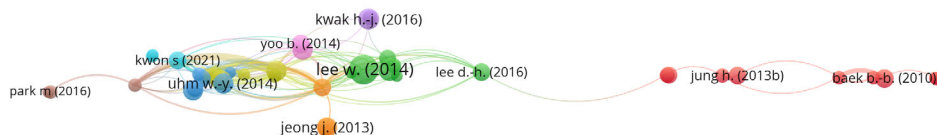


Figure 8. Bibliographic coupling network

Lee and Chang's (2017) meta-analysis of elementary-school instruction occupied the most central position in the network, with 22 links and the highest total link strength of 103. It was followed by Lee and Lee's (2022) phonics intervention study, with 16 links and a total link strength of 63; Park and Ahn's (2014) patterned-storybook reading study, with 23 links and a total link strength of 56; and Lee's (2020) collaborative action research, with 14 links and a total link strength of 53. Kim and Kwon's (2023) written-language intervention study also occupied a prominent position, recording 15 links and a total link strength of 47.

Cluster 1 contained nine publications and broadly represented policy- and program-oriented approaches to low achievement. The studies addressed ability grouping, supplemental and after-school instruction, school accountability, educational achievement gaps, national assessment, differentiated classes, and support for learners across elementary, secondary, and university settings. The two Baek studies (Baek 2010, 2011) on ability grouping and supplemental instruction were the most strongly connected publications within this cluster.

Cluster 2 comprised seven studies concerned primarily with instructional models for elementary English underachievers. These included patterned storybooks, phonemic-awareness instruction, decodable books, culturally oriented after-school programs, flipped learning, and broader investigations of the causes and countermeasures of low achievement. Lee (2014) and Park and Joo (2012, 2013) were the most strongly coupled publications in this cluster.

Cluster 3 included six publications focusing on literacy- and reading-oriented interventions. The studies examined written-language instruction, phonics, self-directed learning, learning strategies, multiple-intelligence-based reading programs, and affective outcomes. Kim and Kwon (2023) had the highest total link strength in this cluster, followed by Park et al. (2017), Uhm and Kim (2014), and Seo and Bae (2015).

Cluster 4 also contained six publications and represented a closely connected body of relatively recent research on elementary English intervention, teacher preparedness, and research synthesis. It included studies using pictorial typography phonics and collaborative action research, along with meta-analyses of elementary English instruction and phonics interventions. Lee and Chang (2017) served as the principal hub of this cluster and of the network as a whole.

The remaining clusters were smaller and represented more specialized strands. Cluster 5 addressed school-level achievement factors, educational welfare, and minimum achievement standards. Cluster 6 brought together research on the developmental processes of English underachievement and affective or literature-based instructional support. Cluster 7 included studies of the causes of English underachievement, case-based instruction, and patterned-storybook reading. Cluster 8 was oriented toward secondary-school interventions, including customized reading, smartphone-assisted vocabulary learning, and a meta-analysis of instructional effects. Cluster 9 linked research on technology-assisted vocabulary learning with the vocabulary and grammar-learning experiences of middle-school underachievers.

The strongest bibliographic coupling relationship was found between two 2017 meta-analyses of secondary- and elementary-school instruction (Lee and Chang 2017; Lee et al. 2017), with a link strength of 15. Other strong relationships were identified between the two studies by Baek (2010, 2011) and between Lee (2020) and Lee and Lee (2022), each with a link strength of 13. Lee and Lee (2022) was also strongly coupled with Lee and Chang (2017), with a link strength of 11.

Overall, within this relatively well-cited subset of publications, the shared bibliographic structure was concentrated around elementary English literacy and intervention research. Policy-oriented studies, research on general academic underachievement, secondary-school interventions, and technology-enhanced instruction formed smaller and more peripheral bibliographic groupings. Because recently published and less-cited articles were underrepresented by the citation-based inclusion criterion, these smaller groupings should not be interpreted as emerging research fronts for the field as a whole.

5. Discussion

5.1 Growth and increasing visibility of the research area

The longitudinal pattern of publication suggests that research on low-achieving English learners has gradually developed from a small and intermittent body of work into a sustained area of inquiry within Korean English education. Although publication output fluctuated across individual years, the overall trajectory was upward, with particularly active research production from the early 2010s and again after 2022. This continuity is more appropriately interpreted as evidence of sustained scholarly attention than as evidence of a fully institutionalized subfield.

The expansion of research in the early 2010s appears to have unfolded alongside growing national attention to basic academic skills, the increased visibility of regional and socioeconomic disparities in English achievement, and the gradual development of diagnostic and remedial support policies (Park and Joo 2012, 2013; Jeong and Kim 2013; Lee and Chang 2017). Renewed publication activity after 2022 may similarly reflect heightened concern over pandemic-related learning loss and a strengthened policy framework for basic academic skills following the enforcement of the Basic Academic Skills Guarantee Act (Lee and Lee 2022; Kim and Kwon 2023). The 2022 revised national curriculum subsequently provided an additional context for growing attention to minimum achievement levels, individualized support, and digital learning (Choi et al. 2025; Heo 2025). These developments should be understood as contextual factors associated with the growth and changing orientation of the field rather than as direct causes of publication output.

The institutional distribution of publications indicates recurring institutional engagement and a concentration of research expertise. A national curriculum and assessment organization, together with several universities specializing in teacher education, accounted for a substantial share of research production. This pattern suggests that the field has developed in close connection with curriculum implementation, educational assessment, classroom intervention, and teacher preparation. The prominent contribution of these institutions also reflects the applied character of the field: research on low-achieving learners has generally been oriented toward identifying educational difficulties (e.g., An and Lim 2013; Lee 2014) and developing forms of instructional or institutional support rather than remaining

exclusively theoretical (e.g., Kim and Jeong 2010; Uhm and Kim 2014).

The concentration of publications in specialist English education journals indicates that the topic has achieved sustained visibility within the scholarly communication channels of Korean English education. Regular publication in journals devoted to primary and secondary English teaching has provided a stable outlet through which findings, intervention models, and methodological approaches could be accumulated and circulated. At the same time, studies included in the present review also appeared in journals focusing on curriculum, educational evaluation, and learner-centered instruction, suggesting that research on low-achieving English learners has extended beyond language-teaching methodology into broader discussions of educational equity and academic support.

Taken together, the sustained publication trajectory, recurring contributions from major institutions, specialist publication outlets, and commonly cited foundational studies indicate that research on low-achieving English learners has become a recognizable, sustained, and increasingly visible area of inquiry in South Korea. These patterns demonstrate continuity in research production and the accumulation of a shared knowledge base, but they do not by themselves establish the existence of a fully institutionalized subfield. In particular, the fragmented author and institutional collaboration networks indicate that the field has not yet developed into a broadly integrated scholarly community. It is therefore more appropriately characterized as a gradually consolidating research area whose scholarly visibility has increased despite limited social and institutional interconnectedness.

5.2 Elementary literacy and remediation as the dominant intellectual core

The convergence of the keyword, citation, co-citation, and bibliographic coupling analyses indicates that elementary-level literacy and remedial instruction constitute the most established intellectual core of research on low-achieving English learners in South Korea. This pattern is not merely a consequence of the frequent appearance of reading-related terms. Literacy-oriented studies also occupied central positions among highly cited publications and served as common reference points linking different strands of subsequent research. The field has therefore developed cumulatively around a relatively coherent problem: how to identify basic English literacy difficulties

and provide targeted instruction before these difficulties become more persistent (e.g., Chang 2004; Kwon and Kim 2012; Kim and Kwon 2023; Kang 2024).

The prominence of this research tradition also reflects the strongly applied orientation of the field. Rather than treating low achievement primarily as an abstract learner characteristic, many studies have approached it as an instructional problem that can be addressed through classroom-based intervention. Research on phonics, early reading strategies, patterned texts, self-directed learning, and differentiated programs has supplied teachers with concrete procedures for supporting learners who have not acquired foundational literacy skills (Kwon and Kim 2012; Lee and Ihm 2012; Uhm and Kim 2014; Seo and Bae 2015). Meta-analytic work has further consolidated this intervention-oriented knowledge base by synthesizing the effects of instructional approaches across elementary-school studies (Lee and Chang 2017). The centrality of these publications suggests that the field's intellectual development has been shaped primarily by efforts to connect diagnosis with practical remediation.

This concentration represents both a strength and a constraint. On the one hand, the accumulation of related studies has produced a recognizable body of knowledge concerning early literacy difficulties and instructional responses. On the other hand, it may have encouraged a relatively narrow conceptualization of English underachievement, in which the problem is understood mainly in terms of elementary reading and decoding difficulties. Studies involving secondary or university learners, oral language skills, writing, broader affective and contextual processes, and technology-supported learning were present but generally occupied less central or more specialized positions in the networks. Accordingly, future development of the field will require preserving the accumulated expertise in literacy remediation while extending the concept of low achievement to a wider range of language abilities, educational stages, and learner circumstances. This need for diversification is particularly relevant as recent research begins to place greater emphasis on curriculum-based standards, diagnostic systems, and technology-assisted support, as discussed in the following section.

5.3 Recent visible themes in standards, diagnosis, and technology

Recent publications show greater visibility of research concerning minimum

achievement standards, diagnostic assessment, teacher preparedness, and technology-assisted support alongside the field's established emphasis on elementary literacy remediation. The growing prominence of keywords related to the national curriculum, basic academic ability, minimum achievement standards, diagnostic assessment, and teacher perceptions indicates increasing concern with how low achievement should be defined, identified, and addressed within formal educational structures (Chang 2023; Heo 2024; Choi et al. 2025). These recently visible themes do not replace the field's literacy-oriented foundation but extend the literature toward curriculum-based criteria, institutional responsibilities, and coordinated learner support.

This recent diversification also draws attention to the conceptual and methodological issue discussed in Section 2.1: studies have employed different terms and operational criteria to identify low-achieving learners, including norm-referenced scores, curriculum-based achievement standards, diagnostic assessments, and teacher judgment. The growing emphasis on minimum achievement standards and diagnostic assessment may contribute to more explicit and systematic identification practices, but it does not in itself resolve the heterogeneity of definitions and criteria across studies. Because the present bibliometric analysis did not code these operational differences at the individual-study level, future systematic content analysis should examine how definitions and identification criteria vary across educational stages and how they have changed over time.

The increased attention to diagnosis is particularly significant because it may reflect growing interest in identifying learning difficulties earlier and linking identification to more systematic support (Woo 2022; Kang et al. 2025). The networks included recently visible but still relatively limited groupings concerning diagnostic assessment, reading difficulties, teacher preparedness, and perceptions of appropriate instructional support. However, diagnosis should not be treated merely as a procedure for determining whether learners meet a minimum achievement level. Its educational value depends on whether diagnostic information is connected to specific instructional decisions, continued monitoring, and appropriate remedial support. The recent emphasis on teacher perceptions is therefore important, as teachers mediate the translation of curriculum standards and assessment results into classroom practice (Heo 2025; Kim 2026). Future research should examine not only the accuracy of diagnostic tools but also how teachers interpret and use their results across different

school levels and learning contexts.

Technology-assisted instruction represents a recently appearing but still limited strand of the literature. The reviewed literature included blended learning, smartphone-assisted vocabulary instruction, AI-supported teaching, AI translation, and other digitally mediated interventions (Oh and Park 2013; Lee et al. 2023). Nevertheless, technology-oriented studies generally occupied smaller or more peripheral positions than research on literacy and reading remediation, and the bibliographic coupling network did not reveal a single coherent technology-based research cluster. The findings therefore support describing technology-assisted instruction as a recently appearing line of inquiry rather than as an established or coherent research area. Its contribution will depend less on the novelty of particular tools than on whether they enable sustained personalization, meaningful feedback, learner accessibility, and integration with diagnostic and remedial practices (Jeong 2025; Jo and Kim 2025). Research should consequently move beyond isolated applications and short-term interventions toward comparative and longitudinal studies that clarify for whom, under what conditions, and through which instructional mechanisms digital and AI-supported approaches are effective.

5.4 Fragmented collaboration and uneven diversification

Despite the field's sustained growth, its collaborative structure remains relatively fragmented. Within the author network, most researchers were disconnected from other productive authors, and collaboration was concentrated in only a few small groups. Institutional collaboration was similarly limited and depended heavily on the Korea Institute for Curriculum and Evaluation as the principal connecting hub. This pattern suggests that research has often developed through localized teams or institution-specific projects rather than through a broadly interconnected scholarly community. Such a structure does not necessarily indicate low research quality, but it may restrict the exchange of data, methods, and theoretical perspectives across institutions.

Thematic diversification has also been uneven. Research beyond elementary literacy—including studies of secondary and university learners, teacher preparedness, affective and contextual factors, technology-assisted instruction, and policy-based

support—has gradually appeared, but these strands remain less central and less strongly connected to the field's dominant knowledge base. Diversification has therefore occurred primarily through the addition of relatively specialized topics rather than through the development of an integrated research agenda connecting school levels, language skills, diagnostic processes, and instructional responses. This may limit the extent to which findings derived from elementary reading interventions can inform broader understandings of English underachievement.

More collaboration could help address this imbalance. Multi-institutional and cross-level studies would make it possible to compare how low achievement develops and is addressed across elementary, secondary, and tertiary contexts, while interdisciplinary collaboration could connect language education with assessment, special education, educational psychology, and learning technology. Shared diagnostic frameworks, longitudinal datasets, and coordinated intervention studies would also strengthen the cumulative development of the field. Although research on low-achieving English learners has established a coherent intellectual foundation, its future development will depend on transforming dispersed areas of expansion into a more connected and diversified program of inquiry.

6. Conclusions

This study examined 177 peer-reviewed journal articles published between 2003 and 2026 to map the development and intellectual structure of research on low-achieving English learners in South Korea. The findings show that this literature has become a sustained and increasingly visible area of Korean English education, supported by recurring publication activity and contributions from major institutions and specialist journals. However, fragmented author and institutional collaboration indicates that the research area has not yet developed into a broadly integrated scholarly community. Its knowledge base has developed primarily around elementary-level literacy and remedial instruction, while minimum achievement standards, diagnostic assessment, teacher preparedness, and technology-assisted support have become more visible in recent publications.

The findings also carry implications for educational practice and policy. Teachers and teacher-education programs can draw on the accumulated literacy-oriented

knowledge base while ensuring that the identification and support of low-achieving learners remain multidimensional and connected to differentiated instruction and progress monitoring. Policymakers should accompany minimum achievement standards with appropriate diagnostic resources, sustained instructional support, and professional development, while promoting cross-level and multi-institutional collaboration in language domains and educational contexts that remain comparatively underrepresented in the literature. These implications concern the distribution and organization of the available knowledge base and should not be interpreted as direct evidence of the effectiveness of particular instructional practices.

Several limitations should be acknowledged. First, the review was restricted to peer-reviewed journal articles identified primarily through South Korean academic databases and the specified English- and Korean-language search strings. It therefore excluded graduate theses, research reports, conference publications, and potentially relevant studies indexed only in international databases or exclusively under alternative terminology not represented in the search strings. Second, citation visibility was assessed mainly through KCI data. Because citation counts are database-dependent and accumulate over time, the analysis may have favored older publications and outlets more comprehensively represented in KCI. Third, although predefined source-priority and checking procedures were applied, metadata translation and harmonization, author-name disambiguation, cited-reference matching, and keyword standardization required researcher judgment. Fourth, the pragmatic application of minimum network thresholds may have excluded recent or specialized studies and may have affected the number, membership, and boundaries of smaller clusters. This limitation was particularly relevant to the bibliographic coupling analysis, which was restricted to publications with at least 10 KCI citations in order to maintain an interpretable network.

A further limitation concerns the conceptual and operational heterogeneity of the corpus. The included studies used overlapping but non-equivalent terminology and identified low-achieving learners through norm-referenced achievement scores, curriculum-based minimum standards, diagnostic assessments, or teacher judgment. Because these differences were not systematically coded at the study level, they may have shaped the composition of the corpus and, consequently, the observed link patterns, cluster boundaries, and relative centrality of particular topics and publications. The networks should therefore be interpreted as mapping an inclusive

but heterogeneous body of literature rather than a uniformly defined learner population. Bibliometric centrality denotes prominence within this corpus, not evidence that a topic or publication is equally relevant across all conceptualizations and identification approaches to English low achievement. Finally, bibliometric indicators represent scholarly visibility and relational organization but cannot directly assess the methodological quality of individual studies or the effectiveness of particular interventions.

These limitations point to several corresponding methodological directions for future research. To address corpus-coverage limitations, subsequent reviews should combine RISS-centered searches with relevant international databases and grey-literature sources and employ expanded bilingual search strings incorporating alternative labels for English low achievement. Comparative analyses could then determine whether broader retrieval strategies produce different contributor, thematic, and citation structures. To reduce database-coverage and publication-age effects, future citation analyses should triangulate KCI data with other citation sources and report publication-age-adjusted indicators alongside raw citation counts, while continuing to interpret these measures as indicators of citation visibility rather than research quality.

The reproducibility of metadata preprocessing could be strengthened through independent validation by multiple researchers, the reporting of agreement or audit results, and the public provision of keyword thesauri, author- and institution-name authority files, cited-reference matching rules, and original-to-standardized metadata logs. The influence of network thresholds should also be examined by comparing multiple inclusion criteria, conducting separate analyses of recent publication cohorts, or applying alternative visualization strategies that permit the inclusion of lower-frequency items while maintaining interpretability. To address the conceptual and operational heterogeneity of the corpus, future systematic content analyses should code the terminology, operational definitions, and learner-identification criteria used in individual studies. Finally, bibliometric mapping should be integrated with methodological quality appraisal, systematic review, and, where sufficient quantitative evidence is available, meta-analysis to examine whether structurally prominent topics and publications are also supported by methodologically rigorous evidence and effective instructional outcomes.

Beyond these methodological improvements, the substantive patterns identified in the present study suggest that future research should pursue a broader and more

integrated conceptualization of English underachievement. Low achievement should not be understood only as difficulty in elementary reading or decoding but as a multidimensional and developmental phenomenon that may involve different language skills, affective and contextual factors, and transitions across educational stages (An and Lim 2013; Kwak and Lee 2023). Future studies should therefore examine how the manifestations, contributing conditions, and instructional needs associated with low achievement differ across elementary, secondary, and tertiary contexts and across reading, writing, listening, speaking, vocabulary, and grammar.

Diagnostic assessment should be investigated not only in terms of its ability to identify learners below a particular standard but also in terms of how its results inform instructional decision-making, progress monitoring, and sustained learner support (Heo 2025; Kang et al. 2025). Digital and AI-supported approaches may contribute to individualized practice and feedback, but their educational value should be examined through comparative and longitudinal research rather than assumed on the basis of technological novelty (Lee et al. 2023; Jeong 2025). Multi-institutional, cross-level, and interdisciplinary studies would further support the development of shared diagnostic frameworks, more diverse datasets, and findings that are applicable across educational settings.

By providing a systematic account of how this research area has developed and how its knowledge base is organized, the present study offers an empirical foundation for a more diversified, collaborative, and interconnected research agenda on low-achieving English learners in South Korea. The methodological and substantive extensions outlined above can build on this structural map by broadening the evidence base, increasing analytical reproducibility, and connecting bibliometric prominence with study quality, instructional effectiveness, and educational relevance.

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Received: 2026. 08. 09.

Revised: 2026. 09. 07.

Accepted: 2026. 09. 11.