

Digital Linguistic Landscapes: A Systematic Review of Language Education, Change, Identity, and Visibility

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ABSTRACT

Digitalisation has extended linguistic landscape research beyond physical signage to social media, messaging applications, virtual learning environments, and online commercial spaces. However, scholarship on digital linguistic landscapes remains fragmented across educational, sociolinguistic, cultural, and policy-oriented perspectives. This systematic literature review synthesises current knowledge concerning the relationships between digital linguistic landscapes and language education, language change, identity construction, and language visibility. Guided by the PRISMA framework, relevant peer-reviewed journal articles published between 2018 and 2026 were identified through Scopus and Web of Science, screened against pre-defined eligibility criteria, and subjected to quality appraisal and integrative thematic analysis. Twenty studies were retained for the final synthesis. The quality assessment indicated a moderate level of overall quality, with a mean score of 4.15 out of 6, equivalent to 69.2%. Four themes emerged: Language Education, Digital Language Change, Language and Identity, and Language Visibility. The findings demonstrate that digital linguistic landscapes support reflective learning, intercultural competence, and critical language awareness, while facilitating multimodal communication, lexical innovation, grammatical variation, code-mixing, and culturally situated meaning-making. Linguistic and semiotic choices also contribute to the construction of personal, cultural, and commercial identities by indexing belonging, authenticity, prestige, and global orientation. At the same time, unequal language visibility reflects broader relationships involving institutional authority, language policy, and ethnolinguistic vitality, with English frequently occupying a dominant position over regional and indigenous languages. The review highlights the need to integrate digital linguistic landscapes into language education and promote more equitable multilingual representation online. Future research should adopt longitudinal, comparative, and mixed-method approaches to examine under-represented languages, platform algorithms, audience participation, and the relationship between online visibility and everyday language practices.

Keywords: Digital linguistics landscape; language education; digital language change; language identity, language visibility

INTRODUCTION

Digitalisation has broadened the concept of the linguistic landscape beyond written language displayed on streets, commercial signs, and public institutions to encompass social media, messaging applications, virtual learning environments, and online promotional spaces. These digital linguistic landscapes integrate written

language with images, video, sound, emojis, hashtags, and other semiotic resources, thereby creating dynamic environments for multilingual communication. Previous research suggests that such environments can strengthen language awareness, reflective learning, and intercultural competence (Alyeksyeyeva et al., 2022; Lomicka & Ducate, 2021). They also facilitate lexical innovation, grammatical variation, code-mixing, intertextuality, and multimodal communication (Lee, 2019; Kappassova et al., 2024; Hnatyuk et al., 2026). Furthermore, linguistic choices in digital environments enable individuals, businesses, and communities to construct identities and communicate belonging, authenticity, prestige, and global orientation (Biró, 2021; Kamalova, 2025; Cao, 2026).

Despite the expanding body of scholarship, research on digital linguistic landscapes remains theoretically and empirically fragmented. Existing studies frequently concentrate on particular platforms, countries, languages, or linguistic phenomena without integrating the educational, linguistic, identity-related, and visibility dimensions of digital communication. In addition, the prominence of dominant languages, particularly English, may obscure unequal linguistic hierarchies and the marginalisation of regional, minority, and indigenous languages, as demonstrated in studies conducted in Lithuania, Saudi Arabia, and Ghana (Šliachtenko, 2025; Alkhalil, 2025; Bisilki, 2025). The use of diverse qualitative, quantitative, corpus-based, and multimodal methodologies also makes it difficult to assess the collective contribution of the existing evidence systematically.

Consequently, an important research gap exists due to the absence of a consolidated review explaining how digital linguistic landscapes simultaneously influence language education, linguistic change, identity construction, and language visibility. This systematic literature review addresses this gap by synthesising 20 studies retrieved from Scopus and Web of Science and organising the evidence into four themes: Language Education, Digital Language Change, Language and Identity, and Language Visibility. In doing so, the review provides an integrated account of how technological affordances, multilingual practices, social interaction, and power relations shape contemporary digital language environments.

Research questions are fundamental to a systematic literature review because they define the scope and direction of the entire review process. Clearly formulated questions support a comprehensive and systematic search by ensuring that studies addressing the principal dimensions of the research topic are identified and examined (Kitchenham, 2007). In this review, the research questions were developed using the PICO framework, a mnemonic framework proposed by Lockwood et al. (2015), particularly for formulating questions in qualitative evidence synthesis. PICO represents Population, Interest, and Context, which collectively specify the population or groups under investigation, the phenomenon of interest, and the context in which that phenomenon occurs. Accordingly, four research questions were formulated to guide the identification, selection, data extraction, analysis, and synthesis of the relevant literature, as follows:

- **RQ1:** How are digital and multilingual linguistic landscapes used to support language education, intercultural competence, and language awareness among learners and educators?
- **RQ2:** How do social media and digital communication environments influence language change, variation, and meaning-making among digital language users?
- **RQ3:** How are linguistic and multimodal resources used to construct, negotiate, and commodify individual, cultural, and commercial identities in digital linguistic landscapes?
- **RQ4:** How do physical and virtual linguistic landscapes shape the visibility, dominance, marginalisation, and vitality of languages in multilingual communities?

LITERATURE REVIEW – THEORETICAL FRAMEWORK

Sociocultural Theory by Vygotsky (1978) that supports Language Education

Sociocultural Theory by Vygotsky (1978) provides a strong theoretical foundation for understanding language education as a socially and culturally mediated process. Vygotsky (1978) argued that learning does not occur independently of society; instead, knowledge is initially constructed through interaction with teachers, peers, and communities before being internalised by the learner. Language occupies a central position in this process because it functions both as a means of communication and as a psychological tool for organising thought,

interpreting experience, and constructing knowledge. A key concept within the theory is the Zone of Proximal Development, which refers to the difference between what learners can accomplish independently and what they can achieve with appropriate guidance from a teacher or a more knowledgeable peer. Instructional support, commonly described as scaffolding, enables learners to complete challenging tasks and is gradually reduced as they develop greater competence and independence. In contemporary language education, mediation may occur through classroom discussions, collaborative activities, reflective practices, authentic texts, social media, and digital linguistic landscapes. These resources expose learners to diverse language forms, cultural meanings, and communicative practices. Sociocultural Theory therefore supports the Language Education theme by explaining how language awareness, intercultural competence, teacher agency, and beliefs about English develop through participation in meaningful multilingual contexts. The theory also emphasises that language education should extend beyond grammatical knowledge by providing opportunities for learners and educators to interact, reflect, negotiate meaning, and engage critically with authentic language practices. Consequently, effective language learning is understood as a collaborative, contextualised, and culturally responsive process rather than the passive transmission of linguistic rules.

Computer-Mediated Discourse Analysis by Herring (2004) that supports Digital Language Change

Lorem Computer-Mediated Discourse Analysis (CMDA), developed by Herring (2004), provides an appropriate theoretical and methodological foundation for understanding digital language change. CMDA is designed to examine language and interaction produced in computer-mediated environments, including discussion forums, email, instant messaging, social media, and other online communication platforms. Herring (2004) argues that online activities are substantially constituted through discourse and commonly leave persistent textual records that enable researchers to identify linguistic and interactional patterns systematically. The framework examines digital discourse at four interconnected levels: structure, covering vocabulary, spelling, typography, and grammar; meaning, involving interpretation, connotation, and communicative intention; interaction, including turn-taking, responses, quotations, and message organisation; and social behaviour, encompassing identity, ideology, group membership, and community norms. CMDA assumes that digital language practices are shaped by both technological and social conditions. Platform features such as message length, synchronicity, visibility, persistence, and multimodal affordances interact with participants' cultural backgrounds, relationships, audiences, and communicative purposes. Consequently, digital language change should not be regarded simply as linguistic deterioration or deviation from conventional standards. Instead, innovations such as memes, hashtags, abbreviations, neologisms, code-mixing, non-standard grammar, and multilingual subtitles may represent creative adaptations to new communicative environments. CMDA supports the Digital Language Change theme by explaining how users modify linguistic resources to communicate efficiently, express cultural meanings, establish group affiliations, and participate in evolving online communities. The framework also enables researchers to connect observable micro-level features, such as lexical or grammatical choices, with broader developments in language variation, cultural interaction, and digitally mediated social practices. Thus, CMDA conceptualises digital language change as a dynamic process arising from the interaction among technology, society, culture, and communicative creativity.

Sociocultural Linguistic Theory of Identity by Bucholtz and Hall (2005) that supports Language and Identity

The Sociocultural Linguistic Theory of Identity, proposed by Bucholtz and Hall (2005), provides a strong theoretical foundation for understanding the relationship between language and identity. The theory rejects the assumption that identity is a fixed personal characteristic that exists prior to communication. Instead, identity is understood as a dynamic, socially situated, and relational phenomenon that emerges through linguistic interaction and other semiotic practices. Bucholtz and Hall organise the framework around five principles: emergence, positionality, indexicality, relationality, and partialness. Emergence indicates that identity is produced through discourse, while positionality recognises that individuals may occupy broad social categories, local cultural positions, and temporary interactional roles. Indexicality explains how linguistic choices, such as language selection, code-switching, labels, styles, and stances, point towards social meanings, including locality, modernity, authenticity, prestige, and group membership. Relationality emphasises that identity is constructed through relationships of similarity and difference, authenticity and artificiality, and authority and

delegitimisation. Partialness acknowledges that identity is never determined solely by individual intention, as it is also shaped by habitual practices, audience interpretation, social interaction, ideology, and institutional power. This theory supports the Language and Identity theme by explaining how individuals, businesses, and online communities use multilingual and multimodal resources to position themselves within local, national, and global contexts. For example, English may index cosmopolitanism and commercial modernity, while regional or minority languages may communicate heritage, authenticity, and community belonging. In digital environments, identity is also negotiated through posts, images, captions, comments, and audience responses. Consequently, language does not merely represent an existing identity; it actively constructs, negotiates, reinforces, and, at times, challenges identities through ongoing social interaction.

Linguistic Landscape Theory by Landry and Bourhis (1997) that supports Language Visibility

Linguistic Landscape Theory, proposed by Landry and Bourhis (1997), provides a strong theoretical foundation for examining the visibility, prominence, and social status of languages in multilingual environments. Landry and Bourhis (1997) define the linguistic landscape as the visibility and salience of languages displayed on public and commercial signs within a particular territory, including road signs, advertising billboards, street names, shop signs, place names, and signs on government buildings. The theory proposes that linguistic landscapes perform two principal functions: informational and symbolic. The informational function reveals which languages are available, expected, or institutionally accepted within a particular space, thereby helping individuals identify the linguistic characteristics and boundaries of a community. The symbolic function indicates the relative power, prestige, status, and vitality of the language groups inhabiting that space. Accordingly, the frequent and prominent display of a language may suggest strong political, economic, or institutional support, whereas its limited presence or absence may indicate marginalisation or reduced recognition. The theory also supports the Language Visibility theme by explaining how language hierarchies are communicated through the selection, frequency, placement, size, and presentation of languages across physical and virtual settings. Its application has expanded beyond traditional public signage to encompass social media, institutional websites, messaging platforms, and online promotional materials. In these environments, language visibility is not neutral, as it reflects broader relationships involving language policy, globalisation, identity, institutional authority, and ethnolinguistic vitality. Thus, the theory enables researchers to interpret which languages are made visible, which are marginalised, and what these patterns reveal about power and linguistic diversity.

CONCEPTUAL FRAMEWORK

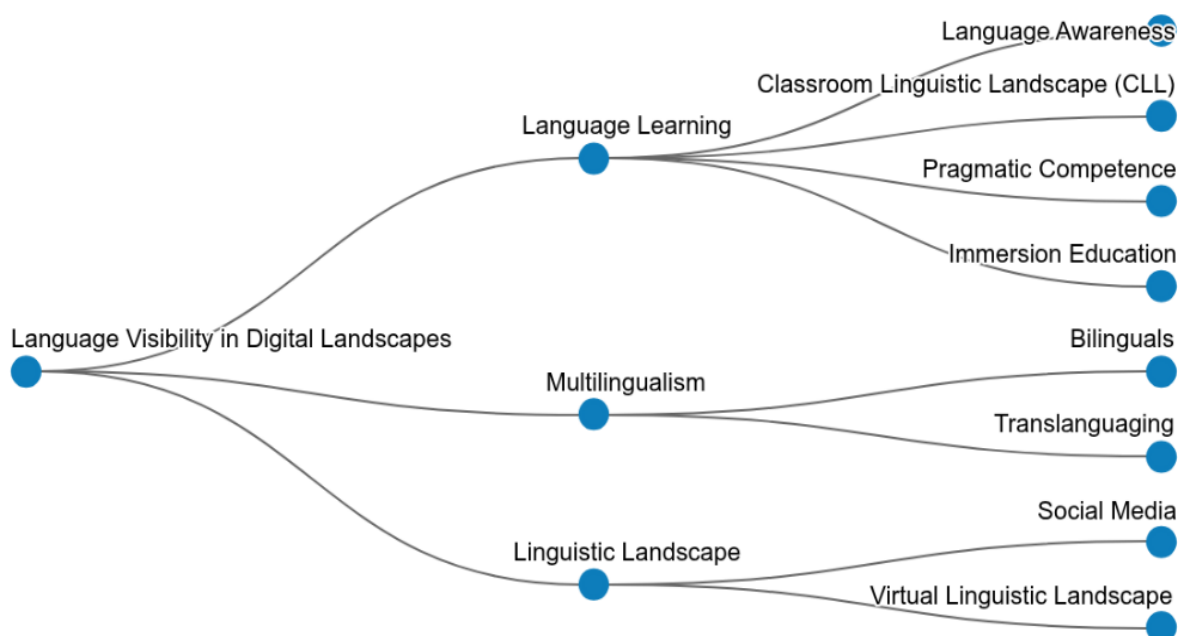


Figure 1 Conceptual Framework

The conceptual framework positions language visibility in digital landscapes as the central construct connecting language learning, multilingualism, and linguistic landscapes. As illustrated in the diagram, these dimensions encompass language awareness, classroom linguistic landscapes, pragmatic competence, immersion education, bilingualism, translanguaging, social media, and virtual linguistic landscapes. Sociocultural Theory explains the language education dimension by viewing learning as a socially and culturally mediated process through which learners develop knowledge through interaction, collaboration, reflection, and engagement with linguistic and digital tools (Vygotsky, 1978). Computer-Mediated Discourse Analysis supports the digital language change dimension by explaining how platform characteristics and online interactions influence vocabulary, grammar, discourse patterns, multilingual practices, and multimodal meaning-making (Herring, 2004).

The framework also draws on the Sociocultural Linguistic Theory of Identity, which conceptualises identity as an emergent and relational outcome of linguistic and semiotic practices (Bucholtz & Hall, 2005). From this perspective, language choices on social media and in virtual spaces enable individuals and communities to construct, negotiate, and contest local, cultural, professional, and global identities. Finally, Linguistic Landscape Theory explains language visibility through the informational and symbolic functions of displayed languages (Landry & Bourhis, 1997). The prominence, positioning, or absence of languages in digital spaces may reveal their relative status, institutional support, power, and ethnolinguistic vitality. Together, the four theories establish digital linguistic landscapes as interconnected environments in which language education, change, identity, and visibility are continuously shaped by technological affordances, multilingual interactions, social practices, and unequal linguistic hierarchies.

METHODOLOGY

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework was adopted to promote transparency, completeness, and consistency throughout the systematic literature review process (Page et al., 2021). PRISMA provides structured guidance for identifying, screening, assessing, and reporting studies included in a review. In this SLR, the researchers collaboratively evaluated the retrieved publications to determine their relevance to the topic of digital linguistic landscapes. Scopus and Web of Science were selected as the primary databases because of their extensive multidisciplinary coverage, rigorous indexing standards, and inclusion of high-quality, peer-reviewed literature.

The review process comprised five stages: (i) identification, (ii) screening, (iii) eligibility assessment, (iv) data abstraction and analysis, and (v) quality appraisal. During the identification stage, systematic searches were conducted to retrieve potentially relevant publications. The screening stage involved removing duplicate records and applying pre-defined inclusion and exclusion criteria to eliminate studies that did not align with the review objectives. During the eligibility assessment, the remaining full-text articles were examined to confirm their relevance and compliance with the selection criteria. Data abstraction and analysis subsequently involved extracting information concerning study characteristics, methods, findings, and theoretical contributions, followed by the organisation of the evidence into meaningful themes. Finally, a quality appraisal was conducted to assess the clarity, methodological rigour, relevance, conceptual foundations, comparative value, and limitations of each included study. This transparent and structured procedure strengthened the reliability, reproducibility, and credibility of the review findings, thereby providing a sound evidence base for future research and practice.

Identification

In accordance with the PRISMA framework, the identification stage served as the starting point of the systematic literature review and aimed to capture a comprehensive body of relevant literature while minimising potential selection bias. A structured search was conducted across two major bibliographic databases, Scopus and Web of Science (WoS). The search strategy combined terms related to linguistic landscapes, including “linguistic landscape”, “language landscape”, and “semiotic landscape”, with digital communication terms such as “social media”, “social networking”, “online platforms”, and “digital communication”. The complete search strings used for both databases are presented in Table 1.

Scopus and WoS were selected because of their extensive multidisciplinary coverage, rigorous indexing standards, and strong representation of peer-reviewed research in linguistics, communication, education, and the social sciences. The database searches retrieved 126 records from Scopus and 45 records from WoS, producing a total of 171 records before screening and duplicate checking. The larger number of records obtained from Scopus may reflect its broader journal coverage, particularly within the social sciences, whereas WoS contributed a more selective collection of established scholarly publications. Using both databases strengthened the comprehensiveness of the search, reduced database-specific bias, and increased the likelihood of identifying studies from varied geographical and disciplinary contexts. Furthermore, the carefully constructed search terms accommodated relevant terminological variation while maintaining close alignment with the review objectives. This transparent and reproducible identification process established a robust evidence base for the subsequent screening and eligibility assessment stages.

Table 1 The Search String

Scopus	TITLE-ABS-KEY (("linguistic landscape" OR "language landscape" OR "semiotic landscape") AND ("social media" OR "social networking" OR "online platforms" OR "digital communication"))
Web of Science	TITLE-ABS-KEY (("linguistic landscape" OR "language landscape" OR "semiotic landscape") AND ("social media" OR "social networking" OR "online platforms" OR "digital communication")) Extracted August 2026

Screening

During the screening stage, the records identified through Scopus and Web of Science were evaluated for their relevance to the review objectives and the four research questions. The initial pool was refined by checking for duplicate records and applying pre-determined inclusion and exclusion criteria. No duplicates were identified across the two databases. Following the screening of titles, abstracts, publication details, and subject relevance, 99 records were excluded, leaving 72 articles, comprising 59 records from Scopus and 13 from Web of Science, for further assessment, as presented in Figure 2. Priority was given to peer-reviewed journal articles that offered substantive empirical or theoretical contributions to the study of linguistic landscapes and digital communication. Consequently, book reviews, book series, meta-analyses, meta-syntheses, conference proceedings, book chapters, and publications outside the scope of the review were excluded.

To maintain consistency and capture recent developments in the field, only English-language publications issued between 2018 and 2026 were retained. The screening criteria also required the studies to address linguistic or semiotic landscapes in relation to social media, online platforms, social networking, or other forms of digital communication. This systematic, criteria-based process strengthened the relevance and coherence of the evidence base, ensuring that only publications aligned with the scope of the review proceeded to the eligibility assessment stage.

Eligibility

During the eligibility stage, 72 articles underwent a detailed assessment to determine whether they fully met the pre-defined inclusion criteria and aligned with the objectives and research questions of the present review. The titles, abstracts, and relevant content of these articles were carefully examined, and the full texts were reviewed where necessary. Studies were excluded if they did not directly address linguistic landscapes in digital or social media contexts, lacked sufficient empirical or theoretical relevance, fell outside the specified publication criteria, or failed to provide adequate information for data extraction and thematic analysis. Following this assessment, 52 articles were excluded, resulting in a final set of 20 articles that satisfied the eligibility requirements and were retained for quality appraisal and qualitative synthesis. The characteristics of the included studies are presented in Table 2.

Table 2 The Selection Criteria

Criterion	Inclusion	Exclusion
Language	English	Non-English
Timeline	2018 – 2026	< 2018
Literature Type	Journal (Article)	Conference, Book, Review
Publication Stage	Final	In Press
Subject Area	Linguistic Landscape and Social Media	Besides Linguistic Landscape and Social Media

Data Abstraction and Analysis

An integrative analysis was employed to examine and synthesise evidence from the 20 included studies, encompassing qualitative, quantitative, and mixed-method research designs. The researchers systematically extracted and reviewed information concerning each study's objectives, theoretical foundations, methodology, research context, digital platform, language focus, and principal findings. Particular attention was given to evidence concerning language education, digitally mediated language change, identity construction, and language visibility within physical and virtual linguistic landscapes. The extracted data were recorded in a structured analysis log to document interpretations, coding decisions, emerging patterns, and relevant conceptual insights.

The researchers then collaboratively coded and compared the findings to identify recurring concepts and relationships across the selected studies. Related codes were consolidated into four overarching themes: Language Education, Digital Language Change, Language and Identity, and Language Visibility. To strengthen analytical consistency, the researchers compared their interpretations, discussed areas of disagreement, and refined the themes through consensus. Each theme was reviewed to ensure that it was conceptually clear, relevant to the research questions, supported by evidence from the included studies, and sufficiently distinct from the other themes. This iterative and collaborative process enhanced the credibility, coherence, and transparency of the thematic synthesis.

Quality of Appraisal

According to Kitchenham (2007), researchers should assess the quality of the studies selected for inclusion in a systematic literature review. Accordingly, the quality assessment framework proposed by Abouzahra et al. (2020) was applied to evaluate the included studies. The framework comprises six assessment questions, with each criterion evaluated using a three-point scoring system. A rating of "Yes" (Y) was assigned a score of 1 when the criterion was fully satisfied; "Partly" (P) was assigned a score of 0.5 when the criterion was partially satisfied but contained identifiable gaps or shortcomings; and "No" (N) was assigned a score of 0 when the criterion was not satisfied. This scoring procedure enabled the quality of each study to be evaluated consistently and facilitated the calculation of an overall quality score for the included literature.

Table 3 Possible ratings for 6 question by Abouzahra et al. (2020)

No	Question
QA1	Is the purpose of the study clearly stated?
QA2	Is the interest and the usefulness of the work clearly presented?
QA3	Is the study methodology clearly established?
QA4	Are the concepts of the approach clearly defined?
QA5	Is the work compared and measured with other similar work?
QA6	Are the limitations of the work clearly mentioned?

Each researcher independently assessed the included studies against the established quality criteria. The individual scores assigned by the three researchers were subsequently combined to determine the overall quality

score for each study. To qualify for inclusion in the subsequent stages of the review, a study was required to achieve a total score exceeding 3.0. This threshold ensured that only studies meeting the minimum standard of methodological and conceptual quality were retained for further analysis and thematic synthesis. The quality assessment results are presented in Table 4.

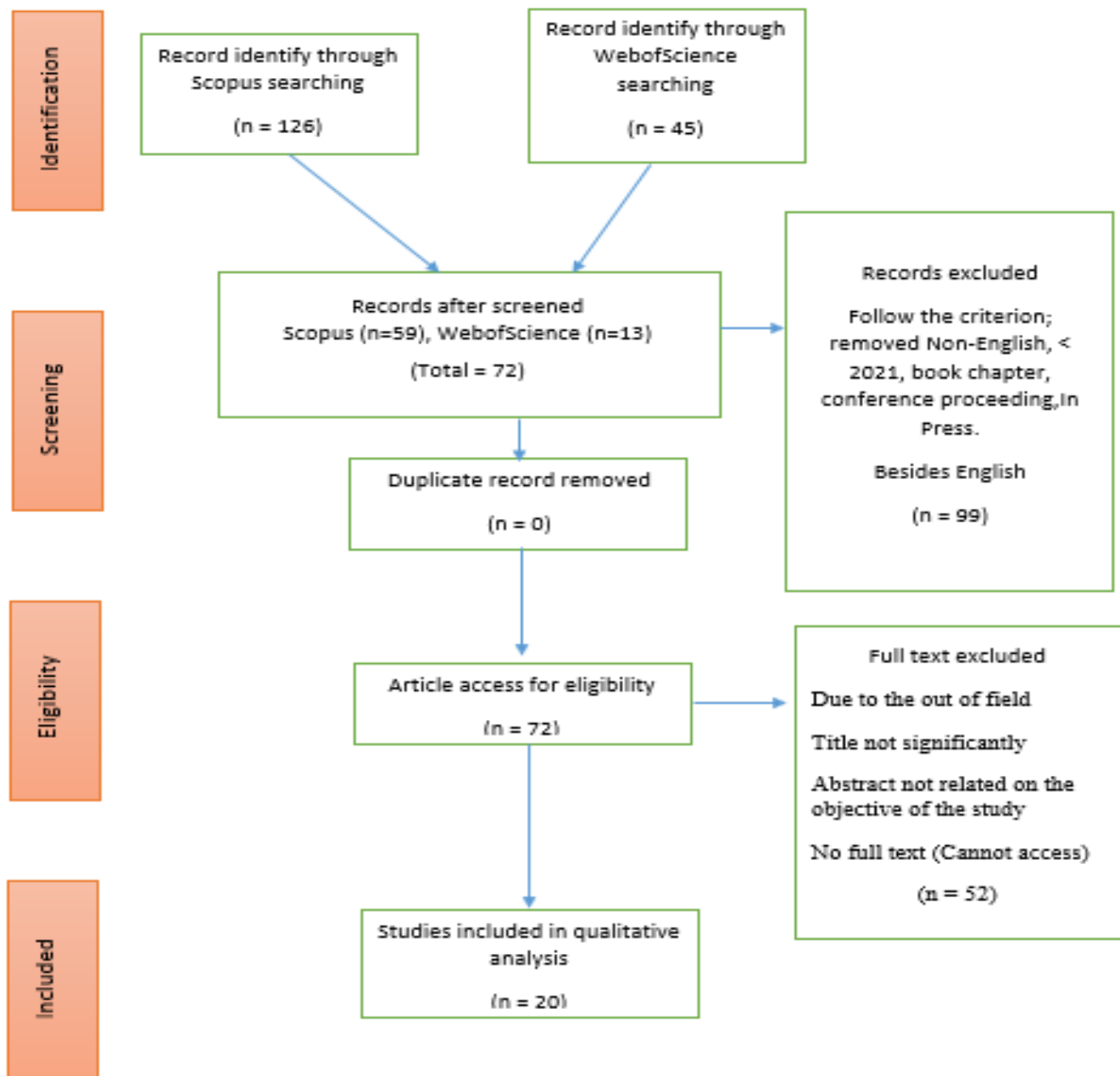


Figure 2 Flow diagram of the proposed searching study by Moher et al. (2009)

FINDINGS AND DISCUSSION

Quality of Assessment

Table 4 presents the quality assessment results for the 20 selected primary studies. Based on their overall percentage scores, the studies were classified into three quality levels:

- High quality ($\geq 80\%$): Three studies achieved this classification, demonstrating strong performance across most of the quality assessment criteria.
- Moderate quality (60–79%): Thirteen studies were categorized as moderate quality, representing the largest proportion of the reviewed literature.

- Lower quality (<60%): Four studies fell within this category, primarily because of incomplete methodological reporting, limited comparison with related studies, or the absence of clearly stated research limitations.

Table 4 Quality Assessment Results

Study	Author(s)	Year	Article Title	QA 1	QA 2	QA 3	QA 4	QA 5	QA 6	Total Mark	Percentage (%)
PS1	Lopriore, L.	2023	Revisiting Language Teacher Education in an ELF-Aware Perspective: Responses to Innovations	Y	Y	P	Y	N	N	3.5	58.3
PS2	Alyeksyeyeva, I. O.; Chaiuk, T. A.; Kovalchuk, I. V.; Galitska, E. A.	2022	Making Sense of Texts: EFL Students' Intercultural Competence and Interpretation Depth	Y	Y	Y	Y	N	N	4.0	66.7
PS3	Lomicka, L.; Ducate, L.	2021	Using Technology, Reflection, and Noticing to Promote Intercultural Learning During Short-Term Study Abroad	Y	Y	Y	Y	N	N	4.0	66.7
PS4	Šliachtenko, J.	2025	Linguistic Landscape and Social Media Discourse of Russian-Speaking Schools in Visaginas (Lithuania)	Y	P	Y	Y	N	N	3.5	58.3
PS5	Lytvyńska, S.; Sabadosh, Y.; Bahatska, O.; Kovalenko, A.; Khomenko, T.	2026	Language Dimensions of Digital Communication in the Context of Global Integration	Y	Y	Y	Y	N	P	4.5	75.0
PS6	Kamalova, A.	2025	Resemiotising Globalisation and Elitism: English-Written Neon Signs in Kazakhstani Coffee Shops and on Social Media	Y	Y	Y	Y	P	N	4.5	75.0
PS7	Chew, M. E.; Ng, L. S.; Jaafar, N. M.; Yeap, C. K.	2024	Understanding Oriental and Western Dragons in a Globalised World: A Cross-Linguistic Study of Dragon-Based Metaphorical Expressions in Chinese and English	Y	Y	Y	Y	Y	N	5.0	83.3
PS8	Kappassova, A. Sh.; Adilova, A. S.; Zeinulina, A. F.; Khamzina, K. M.; Umirbekova, A.; Zhaldybayev, A. Z.	2024	Intertextuality in Kazakh, Russian, and English-Language Media	Y	Y	Y	Y	P	N	4.5	75.0
PS9	Khilkhanova, E. V.; Khilkhanov, D. L.	2025	People and (Linguistic) Landscapes in the Theory and Practice of Sociolinguistics: The Case of Ulaanbaatar	Y	Y	Y	Y	N	N	4.0	66.7
PS10	Dunn, J.; Wong, S.	2025	Language Contact and Population Contact as Sources of Dialect Similarity	Y	Y	Y	Y	Y	N	5.0	83.3

PS11	Hnatyuk, M.; Diakiv, V.; Sopina, O.; Slobodzyanyk, O.; Nedashkivsk a, T.	2026	Virtual Space and New Language Practices: Memes, Slang, and Lexical Transformations	Y	Y	P	Y	N	Y	4.5	75.0
PS12	Lee, H.	2019	Konglish? Or Multilingual Practice? An Investigation of Subtitles in Korean TV Shows	Y	P	P	Y	N	N	3.0	50.0
PS13	Penera, L. K. B.	2018	Philippine English: An Exploratory Mixed-Methods Inquiry on Digital Immigrants and Digital Natives' Variety	Y	Y	Y	Y	P	N	4.5	75.0
PS14	Schram, F.	2026	From Enregistrement to Commodification: Low German in the Virtual Linguistic Landscape of Commercial Instagram Posts	Y	Y	Y	Y	P	N	4.5	75.0
PS15	Alkhalil, S. F. A.	2025	Virtual Linguistic Landscape in Saudi Arabia: A Sociosemiotic Analysis of Three Entertainment Events	Y	Y	Y	Y	N	N	4.0	66.7
PS16	Biró, E.	2021	Speak Global, Sell Local? Digital Linguistic Landscape of Local Small Businesses in Social Media	Y	P	P	Y	N	N	3.0	50.0
PS17	Cao, F.	2026	'Yo! Yo! Welcome to 茂名特产秀': Identity Construction of a New Farmer on the Online Linguistic Landscape of Douyin in China	Y	Y	Y	Y	N	N	4.0	66.7
PS18	Pienimäki, H.-M.; Väisänen, T.; Hiippala, T.	2024	Making Sense of Linguistic Diversity in Helsinki, Finland: The Timespace of Affects in the Linguistic Landscape	Y	Y	Y	Y	N	N	4.0	66.7
PS19	Rangsarittikun, R.	2025	Social Media Communication and the Manifestation of Language Ideologies: A Corpus-Based Approach	Y	Y	Y	Y	N	N	4.0	66.7
PS20	Bisilki, A. K.	2025	Online Linguistic Landscaping and Indigenous Languages in Multilingual Ghana	Y	Y	Y	Y	P	Y	5.0	83.3

Table 4 presents the quality assessment of 20 selected studies using six criteria rated as Yes (1), Partly (0.5), or No (0), with a maximum score of six points per study. Overall, the studies demonstrate a moderate level of quality, achieving a combined score of 84 out of 120, a mean score of 4.20 out of 6, and an overall percentage of 70.0%. All studies clearly state their research purpose (QA1) and define their principal concepts or approaches (QA4), indicating strong conceptual clarity across the literature. Most studies also adequately present the significance of their work (QA2) and establish their methodology (QA3), although several abstracts provide only partial methodological information. In contrast, comparison with similar studies (QA5) is relatively limited, with only PS7 and PS10 fully satisfying this criterion. The reporting of research limitations (QA6) represents the weakest area, as most abstracts do not explicitly acknowledge methodological or contextual constraints. PS7,

PS10, and PS20 achieved the highest scores, at 83.3%, whereas PS12 and PS16 recorded the lowest scores, at 50.0%. As the assessment was based on the abstracts, an examination of the full-text articles may produce more accurate ratings, particularly for QA3, QA5, and QA6.

Themes (formed from Table 4)

Table 5 Analysis of Themes

Theme Code	Theme Name	Studies Involved
Theme 1	Language Education	PS1, PS2, PS3, PS19
Theme 2	Digital Language Change	PS5, PS7, PS8, PS10, PS11, PS12, PS13
Theme 3	Language and Identity	PS6, PS14, PS16, PS17
Theme 4	Language Visibility	PS4, PS9, PS15, PS18, PS20

Table 5 organises the 20 selected studies into four distinct areas that reflect the principal research trends identified in the systematic literature review. Theme 1, Language Education, comprises four studies (PS1, PS2, PS3, and PS19) that examine teacher education, intercultural competence, reflective learning, and students' ideologies towards English. Theme 2, Digital Language Change, is the largest category, containing seven studies (PS5, PS7, PS8, PS10, PS11, PS12, and PS13). These studies explore how digital technologies, social media, globalisation, and cross-cultural interaction influence vocabulary, grammar, metaphors, intertextuality, dialects, and multilingual communication. Theme 3, Language and Identity, includes four studies (PS6, PS14, PS16, and PS17) that focus on the role of language in constructing personal, social, cultural, and commercial identities within digital environments. Finally, Theme 4, Language Visibility, consists of five studies (PS4, PS9, PS15, PS18, and PS20) that examine language presence, dominance, marginalisation, and policy across physical and virtual linguistic landscapes. Overall, the classification demonstrates that existing research is primarily concerned with the effects of digitalisation on language practices, while also highlighting education, identity, multilingualism, and unequal language representation.

Theme 1 (T1): Language Education

Table 6 Analysis for Theme 1

Study	Authors & Year	Article Title	Rationale for Categorisation
PS1	Lopriore (2023)	Revisiting Language Teacher Education in an ELF-Aware Perspective: Responses to Innovations	Examines ELF-aware teacher education, reflective practice, teacher beliefs, professional development, and teacher agency in multilingual educational contexts.
PS2	Alyeksyeyeva et al. (2022)	Making Sense of Texts: EFL Students' Intercultural Competence and Interpretation Depth	Investigates EFL learners' interpretation of linguistic and media texts and the relationship between interpretation depth and intercultural competence.
PS3	Lomicka & Ducate (2021)	Using Technology, Reflection, and Noticing to Promote Intercultural Learning During Short-Term Study Abroad	Uses digital linguistic landscape activities, reflection, and collaborative technology to promote cultural awareness during study abroad.
PS19	Rangsarittikun (2025)	Social Media Communication and the Manifestation of Language Ideologies: A Corpus-Based Approach	Examines students' English language ideologies through reflections on Reddit participation and considers the pedagogical influence of real-world language use.

The four studies classified under Theme 1: Language Education collectively demonstrate how multilingualism, digital technologies, and authentic language use can enhance teaching practices, intercultural learning, and language awareness. Lopriore (2023) focuses on ELF-aware teacher education, demonstrating how reflective practice can encourage teachers to reconsider established beliefs, respond to multilingual classroom realities, and strengthen professional agency. From the learners' perspective, Alyeksyeyeva et al. (2022) examine how

EFL students interpret linguistic, cultural, and media texts, revealing that the depth of interpretation is closely associated with intercultural competence and knowledge of the target culture. Similarly, Lomicka and Ducate (2021) demonstrate that technology-supported linguistic landscape activities undertaken during short-term study abroad can promote reflection, cultural awareness, and a deeper understanding of the surrounding environment. Rangsarittikun (2025) extends the discussion to social media by investigating students' ideologies concerning English through their reflections on Reddit communication. The findings suggest that exposure to authentic digital language practices may challenge conventional native-speaker norms and influence students' perceptions of acceptable English usage. Overall, these studies indicate that contemporary language education should integrate reflective practice, intercultural content, digital platforms, and real-world communication to prepare teachers and learners for increasingly multilingual and culturally diverse environments.

Theme (T2): Digital Language Change

Table 7 Analysis for Theme 2

Study	Authors & Year	Article Title	Rationale for Categorisation
PS5	Lytvyńska et al. (2026)	Language Dimensions of Digital Communication in the Context of Global Integration	Analyses multimodal digital genres and the combination of textual, visual, oral, and non-verbal resources in virtual learning environments.
PS7	Chew et al. (2024)	Understanding Oriental and Western Dragons in a Globalised World: A Cross-Linguistic Study of Dragon-Based Metaphorical Expressions in Chinese and English	Compares culturally embedded dragon metaphors in Chinese and English and demonstrates how cultural meanings vary across linguistic systems.
PS8	Kappassova et al. (2024)	Intertextuality in Kazakh, Russian, and English-Language Media	Examines how quotations, allusions, proverbs, and aphorisms create meaning and cultural identity across multilingual news and social media discourse.
PS10	Dunn & Wong (2025)	Language Contact and Population Contact as Sources of Dialect Similarity	Uses social media corpora to model grammatical similarity among English dialects and relates linguistic variation to contact, distance, and political boundaries.
PS11	Hnatyuk et al. (2026)	Virtual Space and New Language Practices: Memes, Slang, and Lexical Transformations	Focuses on memes, neologisms, slang, abbreviations, hashtags, and other lexical transformations arising from social media communication.
PS12	Lee (2019)	Konglish? Or Multilingual Practice? An Investigation of Subtitles in Korean TV Shows	Investigates multilingual subtitles, Korean-English mixing, symbolic meanings, and the cultural ideologies embedded in media discourse.
PS13	Penner (2018)	Philippine English: An Exploratory Mixed-Methods Inquiry on Digital Immigrants and Digital Natives' Variety	Identifies grammatical features of Philippine English in digitally mediated communication and assesses variation, deviation, and comprehensibility.

The seven studies grouped under Theme 2: Digital Language Change demonstrate how digital communication, globalisation, and intercultural contact reshape language forms, meanings, and practices. Lytvyńska et al. (2026) highlight the emergence of multimodal digital genres that combine written language with visual, oral, and non-verbal resources in virtual learning environments. At the lexical level, Hnatyuk et al. (2026) show how social

media encourages the development and circulation of memes, slang, neologisms, abbreviations, and hashtags. Grammatical change is addressed by Dunn and Wong (2025), who use social media corpora to associate dialect similarity with language contact, geographical distance, and political boundaries. Meanwhile, Penera (2018) identifies distinctive grammatical features of Philippine English in digitally mediated communication without necessarily reducing comprehensibility. Cultural meaning-making is also central to this theme. Chew et al. (2024) reveal contrasting cultural interpretations of dragon metaphors in Chinese and English, whereas Kappassova et al. (2024) illustrate how intertextual resources, including quotations, proverbs, and allusions, enrich multilingual media discourse. Lee (2019) further demonstrates that Korean-English mixing in television subtitles performs symbolic and ideological functions beyond translation. Collectively, these studies indicate that digital language change encompasses not only vocabulary and grammar but also multimodality, cultural symbolism, language contact, and flexible multilingual practices.

Theme 3: Language and Identity

Table 8 Analysis for Theme 3

Study	Authors & Year	Article Title	Rationale for Categorisation
PS6	Kamalova (2025)	Resemiotising Globalisation and Elitism: English-Written Neon Signs in Kazakhstani Coffee Shops and on Social Media	Examines English signage as a marker of elitism, cosmopolitanism, entrepreneurial identity, neoliberal ideology, and commercial modernity.
PS14	Schram (2026)	From Enregisterment to Commodification: Low German in the Virtual Linguistic Landscape of Commercial Instagram Posts	Investigates the symbolic and commercial use of Low German through enregisterment, commodification, and postvernacular language practices.
PS16	Biró (2021)	Speak Global, Sell Local? Digital Linguistic Landscape of Local Small Businesses in Social Media	Explores how small businesses use Hungarian, Romanian, and global linguistic resources to construct local identity and reach commercial audiences.
PS17	Cao (2026)	‘Yo! Yo! Welcome to 茂名特产秀’: identity construction of a new farmer on the online linguistic landscape of Douyin in China	Analyses how multilingual and multisemiotic resources are used by a content creator and viewers to construct and negotiate a “new farmer” identity.

The four studies grouped under Theme 3: Language and Identity illustrate how linguistic choices within digital and commercial landscapes contribute to the construction of social, cultural, and entrepreneurial identities. Kamalova (2025) demonstrates that English-language neon signs in Kazakhstani coffee shops represent more than decorative elements, as they function as markers of cosmopolitanism, elitism, commercial modernity, and entrepreneurial identity. Similarly, Schram (2026) shows that Low German in commercial Instagram posts acquires symbolic and economic value through enregisterment, commodification, and postvernacular practices, even when its use in everyday communication remains limited. Biró (2021) reveals how small businesses strategically combine Hungarian, Romanian, and global linguistic resources to express local community identity while reaching broader commercial audiences. Cao (2026) further examines identity construction within Douyin’s online linguistic landscape, demonstrating how multilingual and multisemiotic resources enable a content creator and viewers to collaboratively construct, reinforce, contest, and negotiate the identity of a globally connected ‘new farmer’. Collectively, these studies demonstrate that language in digital environments is not merely a means of communication but also a symbolic resource through which belonging, authenticity, prestige, and market positioning are expressed.

Theme 4: Language Visibility

Table 9 Analysis for Theme 4

Study	Authors & Year	Article Title	Rationale for Categorisation
PS4	Šliachtenko (2025)	Linguistic Landscape and Social Media Discourse of Russian-Speaking Schools in Visaginas (Lithuania)	Compares physical and virtual school landscapes to determine language use, status, and the predominance of Lithuanian in Russian-speaking schools.
PS9	Khilkhanova & Khilkhanov (2025)	People and (Linguistic) Landscapes in the Theory and Practice of Sociolinguistics: The Case of Ulaanbaatar	Examines language visibility and public attitudes toward English, Korean, and Chinese through an ethnographically informed linguistic landscape approach.
PS15	Alkhalil (2025)	Virtual Linguistic Landscape in Saudi Arabia: A Sociosemiotic Analysis of Three Entertainment Events	Investigates the prominence, ordering, translation, and presentation of Arabic, English, and Chinese in online promotional materials.
PS18	Pienimäki et al. (2024)	Making Sense of Linguistic Diversity in Helsinki, Finland: The Timespace of Affects in the Linguistic Landscape	Explores linguistic diversity, spatial variation, affective atmosphere, and the circulation of social meanings across multilingual neighborhoods.
PS20	Bisilki (2025)	Online Linguistic Landscaping and Indigenous Languages in Multilingual Ghana	Examines English dominance and the marginalization of indigenous Ghanaian languages in WhatsApp communication, including implications for language vitality.

The five studies grouped under Theme 4: Language Visibility examine how languages acquire different levels of prominence, status, and symbolic value across physical and virtual linguistic landscapes. Šliachtenko (2025) demonstrates that Lithuanian predominates in both the school environment and the social media discourse of Russian-speaking schools in Visaginas, reflecting the influence of national language policy and sociopolitical change. Khilkhanova and Khilkhanov (2025) extend this discussion by examining the visibility of English, Korean, and Chinese in Ulaanbaatar, demonstrating that public attitudes towards these languages are shaped by globalisation, economic opportunities, popular culture, and concerns about national identity. Similarly, Alkhalil (2025) identifies varying degrees of prominence for Arabic, English, and Chinese in online promotional materials for entertainment events in Saudi Arabia, illustrating how language presentation responds to national and global trends. Pienimäki et al. (2024) provide a spatial and affective perspective by demonstrating how linguistic diversity contributes to distinct social meanings and atmospheres across multilingual neighbourhoods in Helsinki. Finally, Bisilki (2025) highlights the dominance of English and the marginalisation of indigenous Ghanaian languages in WhatsApp communication. Collectively, these studies demonstrate that language visibility is influenced by policy, globalisation, demographic diversity, cultural attitudes, platform practices, and unequal power relations among languages.

CONCLUSION

Summary of Findings

This systematic literature review concludes that digital linguistic landscapes constitute dynamic sociolinguistic spaces in which language education, linguistic change, identity construction, and language visibility intersect. The 20 reviewed studies reveal that digital and multilingual resources can strengthen reflective learning, intercultural competence, and language awareness, as demonstrated by Lopriore (2023), Alyeksyeyeva et al. (2022), Lomicka and Ducate (2021), and Rangsarittikun (2025). Digital platforms also accelerate linguistic creativity through multimodal genres, memes, neologisms, code-mixing, dialect variation, and non-standard yet comprehensible forms, as reported by Lytvynska et al. (2026), Hnatyuk et al. (2026), Dunn and Wong (2025), Lee (2019), and Penera (2018). Furthermore, language choices contribute to the construction of commercial, cultural, and personal identities, while language visibility reflects unequal relationships involving prestige,

policy, and power. Kamalova (2025), Schram (2026), Biró (2021), and Cao (2026) illustrate identity negotiation, whereas Šliachtenko (2025), Alkhalil (2025), and Bisilki (2025) demonstrate the dominance or marginalisation of particular languages in physical and virtual settings. The findings suggest that educators should incorporate authentic social media content, linguistic landscapes, and multimodal activities into language instruction to develop digital literacy and intercultural awareness. Institutions and policymakers should also recognise online spaces as important language-policy environments and promote more equitable representation of minority and indigenous languages.

Implications and Suggestions for Future Research

Future research should employ longitudinal, comparative, and mixed-method designs to investigate how digital language practices evolve across platforms, geographical regions, and linguistic communities. Greater attention should be directed towards under-represented languages and contexts, particularly minority and indigenous languages whose online visibility remains limited. Researchers should also examine audience participation, platform affordances, algorithmic influences, and the relationship between language visibility in digital spaces and everyday language use in offline settings. More explicit reporting of study limitations and systematic comparisons with related research would further improve the methodological transparency and cumulative value of future studies.

Subsequent systematic reviews should expand beyond Scopus and Web of Science by incorporating databases and scholarly platforms such as Google Scholar, ERIC, Linguistics and Language Behaviour Abstracts, and regional indices. Broader search terminology should also be considered because studies relevant to digital linguistic landscapes may use related concepts, including virtual linguistic landscape, online linguistic landscape, cyberscape, multimodal discourse, and digital sociolinguistics. Finally, future research could focus on specific institutional or professional domains, such as higher education, health care, public administration, tourism, or commercial communication. Domain-specific investigations would provide a more detailed understanding of how language visibility, multilingual practices, identity construction, and digital communication vary according to institutional purposes, intended audiences, and sociocultural conditions.

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