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Instagram for English language learning: A research synthesis of studies published in peer-reviewed journals

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This research synthesis investigates the pedagogical efficacy of Instagram in English Language Learning (ELL). Employing a Qualitative Research Synthesis (QRS) design, the study systematically reviewed 492 Research Articles (RAs) indexed in Google Scholar, focusing on studies published between 2010 and 2024 within peer-reviewed scholarly journals. From the pool of data, 146 studies were selected for a computer-assisted analysis. The key themes relating to the skills developed, contexts of use, participant characteristics, methodologies employed, and underlying theoretical frameworks were extracted using NVivo 14. The results of the analysis revealed a significant emphasis on the development of writing and speaking skills, suggesting a prevalent interest in leveraging Instagram as a supplementary tool for enhancing English as a Foreign Language (EFL) proficiency, particularly within university settings. A notable trend towards mixed-methods design and the application of sociocultural and interactionist Second Language Acquisition (SLA) theories was also observed. Based on the findings, the study addresses key issues for the future of Instagram-related research.

Keywords: Instagram, research articles, peer-reviewed journals, research synthesis

1. Introduction

The integration of technology into language teaching and learning has profoundly reshaped pedagogical approaches all over the globe. Mass and social media platforms, notably Facebook, X, Instagram, and Snapchat have emerged as significant learning tools, demonstrably impacting students' attitudes toward learning English (Odewumi et al., 2018). The prevalence of English as the default language on many platforms, particularly Instagram, further underscores its utility as a context for language learning. The widespread adoption of Instagram and its capacity to facilitate the sharing of diverse multimedia content – visual, textual, and interactive – present considerable opportunities for enhancing English language proficiency among learners. While Facebook and X have been extensively researched in the field of social media studies (see Manca, 2020), the scholarly investigation of Instagram remains somehow limited. The existing studies often suffer from methodological shortcomings (e.g., Nasution, 2023), small unrepresentative pools of data and narrow contextual parameters within constrained temporal frames (e.g., Tayari Ashtiani et al., 2024). This paucity of rigorous research hinders a comprehensive understanding of the contribution of Instagram to English Language Learning (ELL). Consequently, a synthesis of the most relevant Research Articles (RAs) concerning Instagram's role in ELL from its inception (2010) to the present (2024) is timely.

Of the diverse forms of conducting secondary research in social sciences, research syntheses and meta-analyses are utilized for compiling and summarizing findings from the published RAs. While research syntheses are designed to provide a comprehensive overview of the existing body of knowledge, identify emerging trends, and highlight gaps in literature, meta-analyses employ a quantitative framework, facilitating the statistical aggregation of results – mostly *t*-tests – from diverse studies to formulate broader conclusions regarding the data (Chong & Plonsky, 2021). Despite the widespread application of meta-analyses in Applied Linguistics and its sub-fields, the frequency of research syntheses conducted in Computer-Assisted Language Learning (CALL) remains significantly lower (Gillespie, 2020). This scarcity of research is in the preference of CALL authors to rely on statistical techniques for synthesizing quantitative data across multiple research designs. When examined thoroughly, the existing syntheses in CALL seem to reveal a deficiency in effectively integrating and analyzing qualitative findings (Mohsen et al., 2024).

This gap in CALL research emphasizes the necessity for further exploration and advancement through research syntheses to enhance its community's understanding and inform future inquiries across its various sub-disciplines (e.g., Mobile-Assisted Language Learning/MALL or social media-assisted language learning). To address the existing gap, the significance of Instagram in ELL is examined through a review of RAs published in peer-reviewed scholarly journals over the past 15 years. This synthetic study, which has relied on Google Scholar as the primary resource, will cover various aspects, including the language skills (writing, listening, speaking, reading) and sub-skills (pronunciation, vocabulary, grammar), the contexts, the participants' characteristics, the

methodologies, and theories underpin the research. The overall goal of this study is to provide a comprehensive view of how Instagram can serve as a valuable tool in enhancing ELL to pave the way for more effective teaching strategies and learning experiences, ultimately benefiting CALL researchers as well as educators and learners in the realm of ELL.

2. Literature Review

Secondary research on social media as language learning platforms

Various forms of secondary research, including systematic reviews, research syntheses and meta-analyses, cast light on the evolution of scholarly fields and therefore play a pivotal role in leading their advancements. Over time, the large number of such review studies on social media (see, for instance, Barrot, 2022; Elkatmış, 2024; Hu et al., 2024) and their impact on education is a testimony to their high recognition among academics and their true value in shaping educational research. Nevertheless, the story is somehow different when it comes to language teaching and learning. Considering the growing presence of social media as an environment for language learning, the number of review studies conducted in this field is limited (for instance, see Barrot, 2018; Hattem & Lomicka, 2016; Reinhardt, 2019; Solmaz, 2018).

The focus of Barrot (2018) plus Hattem and Lomicka (2016) has been on widely used social media platforms. To elaborate, Hattem and Lomicka conducted a study on Twitter (now X) and its impact on language learning in the literature published from 2009 to 2016. A content analysis of 17 studies was carried out to examine the adoption of Twitter in educational contexts. Based on the findings, the authors see Twitter as a feasible language learning tool, and a platform for social interaction, forming communities as well as facilitating meaningful negotiations. However, to assist the research on social media grow steadily, the authors emphasize the necessity of expanding the depth of analysis and tracing the emerging trends in a more meticulous way. In a comparable way, a critical review of Facebook was conducted by Barrot (2018). Given its emergence as a language learning platform, Facebook's adoption by language teachers gained significance in the previous decade. Having this in mind, Barrot (2018) examined the research contexts, adopted methodologies and the research foci in forty-one Scopus-indexed papers published from 2010 to 2017. The results indicated that Asian countries and their higher education institutes have adopted Facebook more frequently in the language learning classes, experimental or self-report empirical designs have been dominant, and learners' overall language proficiency as well as their writing skill have been examined more by the use of Facebook. Despite providing a rich review of the literature on Facebook and examining it as a CALL-related research area, Barrot's study excludes relevant work owing to limitations in scope, which could have helped us better understand the pedagogical aspects of the social network.

Various social media platforms have been the subject of scrutiny in the other

mentioned studies. By focusing on 23 RAs on four widely used social media platforms, Solmaz (2018) examined how Facebook, Twitter, VKontakte and Mixi have been utilized for language learning in the papers published from 2011 to 2017. Facebook and Twitter turned out to be the most explored platforms with many studies conducting in the United States. Given the limited scope of Solmaz's (2018) work, our understanding of the language skills covered, the participants' characteristics and the adopted methodologies remains incomplete. Following the same path, Reinhardt (2019) surveyed 87 RAs published in reputable CALL journals, namely, *CALICO Journal*, *Computer Assisted Language Learning*, *International Journal of Computer-Assisted Language Learning and Teaching*, *Language Learning and Technology*, *ReCALL*, and *System*. The content analysis of the target RAs revealed that learners' intercultural, socio-pragmatic and digital literacy developed significantly when social media were used informally. However, in the words of Barrot (2022), Reinhardt's (2019) study did not explore the trajectory and the highlighted features of the final dataset so readers could see how the field has evolved in the given timespan, i.e. from 2009 to 2018.

Researching Instagram as an ELL tool

Beyond examining multiple social media platforms, researchers have shown interest in systematically examining particular platforms, such as Instagram to realize their potential for ELL. As a matter of fact, since its launch on October 6, 2010, the photo-sharing app that was once designed for iPhone Operating System (iOS), changed to be a multifaceted social media platform with its Hashtags, Video Sharing, Stories and Reels features; an online community that is considered full of content for continuous ELL (Tayari Ashtiani et al., 2024). Drawing on WhatsApp and Instagram's significance as viable learning environments for higher education contexts, Manca (2020) conducted a synthetic study of 46 RAs published from 2013 to 2018. Interestingly, the results attest to the role of both platforms in developing learners' higher-order thinking and competence. Manca (2020), however, calls for filling the research gaps by including larger samples of studies, extending the coverage of syntheses to K-12, not just the higher education institutes, with participants from various educational backgrounds.

Given the weight Instagram has as a mobile-based language learning tool and the variety of sources/contents it offers for ubiquitous ELL, conducting a research synthesis to fill the existing research niche seems necessary. After all, there are very few review studies (Nasution, 2023; Tayari Ashtiani et al., 2024) that solely focus on Instagram; and if they do, their time span, final dataset and the features examined appear to be limited. For example, Nasution (2023) conducted an in-depth analysis of 24 RA extracted from a larger corpus of 142 papers. The study highlighted the effectiveness of utilizing Instagram in developing language skills, especially writing. It also offered a diverse range of opportunities for learners to engage more creatively and collaboratively in their pursuit of ELL. Our research synthesis is to complement the existing

reviews with a longer time span, i.e. 2010 when Instagram was launched up to and including 2024. By adopting Google Scholar as the most extensively utilized database for accessing academic and scholarly literature online (Gusenbauer, 2018), the synthesis forms its pool of data with a rather large and inclusive corpus. Then, to make the data more manageable for a computer-assisted analysis, it makes a principled choice to concentrate on the most relevant literature, i.e. RAs published in peer-reviewed scholarly journals. Most importantly, our investigation sets itself apart from the existing literature by covering various aspects of researching Instagram, including the language skills and sub-skills, the contexts, the participants' characteristics, the adopted methodologies, and the theories underpinning the research. The following research questions guide the current study:

1. What language skills and sub-skills are the most investigated in Instagram-related published RAs in peer-reviewed scholarly journals?
2. What research contexts and participant profiles are highlighted in Instagram-related published RAs in peer-reviewed scholarly journals?
3. What research methodologies are applied the most and what underlying theories frame Instagram-related published RAs in peer-reviewed scholarly journals?

3. Methodology

Research design

This synthesis employs a QRS design to investigate ELL through Instagram-related published RAs. QRS represents a specific type of research synthesis that concentrates on qualitative data. In the words of Dizon (2023), when the obtained qualitative data are combined with quantitative data, the subsequent analysis provides a more comprehensive understanding of the topic under investigation. Despite its potential, QRS is utilized less frequently in CALL-related research (Chong & Reinders, 2021). Given the nature of the data collected in this study, and the focus on theme extraction using NVivo 14, adopting QRS was a viable option owing to its ability to mitigate issues related to generalizability of findings. By systematically summarizing and synthesizing findings from multiple studies, QRS can present a more cohesive picture of the research landscape (Chong & Plonsky, 2021). On top of the large-scale studies, Chong and Plonsky (2021, p. 3) stated that QRS "has potential to systematically summarize qualitative findings in small scale studies conducted by practitioners (e.g., action research, exploratory research, appreciative inquiry) to promote reflective teaching and evidence-based innovations". The systematic nature of QRS is outlined by these two prominent synthesists in the field, who describe this particular research design as comprising seven distinct steps: 1. designing research questions; 2. identifying keywords for literature review search; 3. conducting literature search; 4. evaluating literature using inclusion criteria; 5. extracting qualitative data; 6. synthesizing qualitative data; and 7. reporting synthesized data. Accordingly, the first step in conducting a research synthesis

involves creating a comprehensive list of research questions. In this study, the research questions focus on the specific language skills, contexts, the participants' characteristics, adopted methodologies, and theories underpinning the Instagram-related RAs.

Identifying keywords and literature review search

Following the framework, three specific keywords related to the topic being studied, i.e. “Instagram”, “English Learning” and “English Language Learning” were chosen as the search strings. Google Scholar was chosen as the reference database for three main reasons, i.e. its inherent potential and reliance in Google search engine to conduct a comprehensive literature search, the over-reliance on Scopus and Web of Science in the previous synthetic literature (e.g., Barrot, 2022; Tayari Ashtiani et al., 2024) and its popularity as the most extensively utilized database for accessing academic and scholarly publications on the web (Gusenbauer, 2018). Afterwards, the three keywords were explored in Google Scholar for providing us with the potentially pertinent literature published between the end of 2010 (when Instagram was launched) to the fall of 2024 (when the search was carried out). The keywords were searched for not only in the titles, but also in the abstracts and the keywords section of the studies found online. Our search resulted in a total of 492 relevant hits on the search engine, providing a substantial foundation for further exploration of the topic.

Inclusion and exclusion criteria

After finalizing the pool of data, the next step of the QRS framework was to apply inclusion and exclusion criteria. Meeting these criteria could help the researchers form a more manageable dataset and focus on the target RAs that do not appear in any other journal(s) or any other academic genre(s). Our inclusion/exclusion criteria consisted of two main points: RAs found needed to be published in peer-reviewed scholarly journals, i.e. the ones that strictly adhere to the double-blind peer-review process. Examples are *CALL*, *CALL-EJ*, *System* and *Issues and Trends in Educational Technologies*, among many others. Moreover, they needed to be written in English and focus specifically on ELL facilitated through Instagram. It should be clarified that considering the potentials of QRS as a well-established research design, to cover a wider literature for a more comprehensive analysis and also to be able to provide a formal evaluation of the potential of numerous Instagram-related studies (Dizon, 2023), we decided to go beyond collecting qualitative papers and form a final dataset that represents quantitative papers as well as other types of RAs (e.g. theoretical, review, etc.)

A total of 67 theses, 48 proceedings, 28 conference papers, 3 books, 1 duplicated publication, and 1 book chapter were excluded. Following these exclusions, a total of 344 RAs remained available for subsequent analysis. With a thorough examination of the journal homepages and the abstract sections of the papers, a second batch of 198 articles were excluded from consideration.

This was because they were published in non-peer-reviewed journals, authored in languages other than English or not facilitating ELL through Instagram. We cross-checked the articles against Scopus and Web of Science, identifying only seven unique papers. This served as a validation of our choice to use Google Scholar as our reference database, as it provided the highest number of relevant papers for the purpose we had in mind (i.e. a thorough investigation of the published literature). Consequently, the final dataset was formed with 146 RAs for a computer-assisted analysis.

Data extraction and synthesis

In the fifth step of the research process, the data obtained from the 146 studies were extracted, coded and then recorded on a Master Coding Sheet using Microsoft Excel. However, to establish reliability, 10% of the dataset (15 RAs) was initially analyzed by two independent coders, discrepancies were resolved and objectivity in data analysis was ensured. With an inter-coder reliability of 82%, our initial analysis demonstrated remarkable consistency. In addition, steps were taken to ensure the validity of the data. This involved consulting two experts, i.e. Ph.D. holders in Applied Linguistics. Their insights and evaluations helped to confirm that the data and its initial analysis were accurate and representative of the intended measures.

The sixth step in the QRS framework focuses on the comprehensive analysis of the dataset. One effective method for conducting thematic analysis is the data-driven approach. Following Riazi et al. (2018, p. 44), and instead of imposing pre-conceived classifications, we relied on “the actual words of the authors as much as possible” to extract the relevant themes or what NVivo 14 names parent nodes. Coding certain themes such as research contexts, participants’ characteristics and the adopted methodologies was straightforward and therefore was conducted manually. However, NVivo 14 was utilized to extract the remaining obscure themes (pertinent skills/sub-skills and theories), the ones that many authors do not explicitly mention in the RAs and need a level of interpretation. In doing so, we could export the lists of recurring themes – both parent nodes (skills/sub-skills and theories) and child nodes (i.e. sub-themes related to the main extracted themes, e.g., it is ‘Instagramming for interaction’) – to be able to merge them and get access to presentable data for authoring this paper.

4. Results

Given the synthetic nature of the study, a report on the distribution of papers over distinct time periods and the types of RAs in the entire dataset seems essential.

Time distribution of RAs

The analysis of the RAs over distinct time periods revealed significant trends in research activity, as depicted in Figure 1.

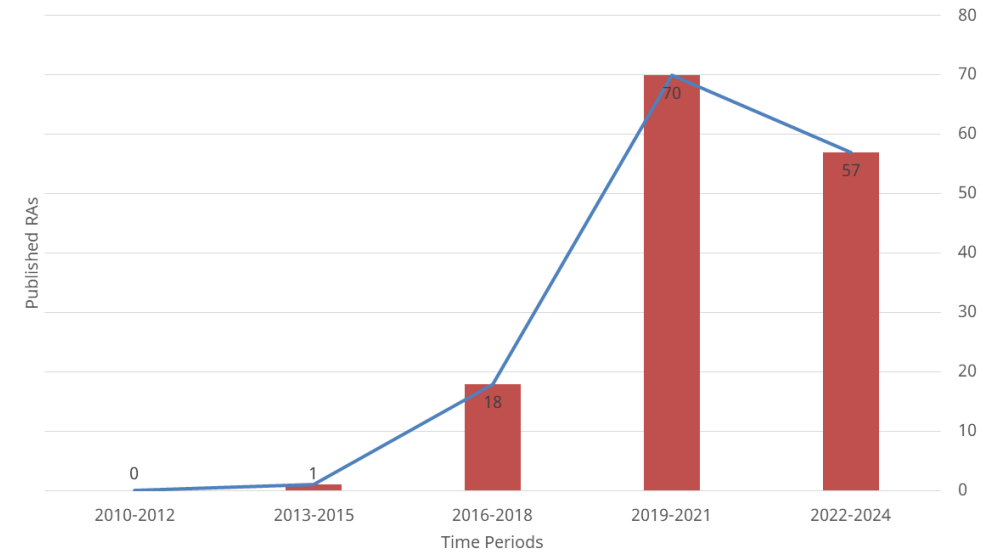


Figure 1. Publication output on Instagram in peer-reviewed scholarly journals

During the initial two time periods, specifically from 2010 to 2015, there was a noticeable scarcity of published RAs, indicating a lack of scholarly output on Instagram adoption. This is not surprising as employing social networks for ELL takes time and needs resources. However, a marked increase in the number of published RAs was observed in the third time period, spanning 2016 to 2018. The most remarkable finding emerged in the fourth time period, from 2019 to 2021, when the number of published RAs experienced a dramatic increase, quadrupling compared to the previous period. This substantial growth, confirming the findings of Tayari Ashtiani et al. (2024), indicates not only heightened research activity on Instagram but also reflects a peak in scholarly interest and engagement in the field during these years.

Categories of RAs

As discussed previously, owing to the data-driven approach we adopted, prior categories were not imposed to analyze the data. Through the analysis, we realized that more than half of the RAs were empirical in the sense that their authors collected and then analyzed primary data related to/using Instagram. Theoretical studies, or position papers that were based on models/frameworks, ranked second and were followed by descriptive RAs (i.e. a setting or phenomenon related to Instagram described). As can be observed in Table 1, some RAs fell under the category of merged studies, where two or more types of research designs were combined within a single work.

Table 1. Breakdown of type of RAs in the final dataset

Type of research articles	Raw frequency n	Percentage %
Empirical	77	52.7
Theoretical	21	14.3
Descriptive	7	4.7
Review	5	3.4
Merged ^a	17	11.6
Other	19	13
Total	146	100

Note. ^aEvaluative & empirical (7), descriptive & empirical (6), descriptive & theoretical (1), evaluative & theoretical (3).

Language skills and sub-skills

The data provided in Table 2 reveals the classification of language skills based on their presence in the RAs.

Table 2. Breakdown of language skills and sub-skills in the final dataset

Language skills	Raw frequency n	Percentage %
Integrated language skills	56	38.3
Writing	40	27.3
Speaking ²²	15	
Vocabulary	19	13
Grammar	4	2.7
Reading	3	2
Listening	2	1.3
Total	146	100

Confirming the results of Nasution (2023), a significant observation is that more than one-third of these RAs focus on the impact of Instagram on integrated English language skills, referring to the simultaneous development of two or more language skills. Writing and then speaking, that mainly deal with English language production, emerged as the most prominently featured language skills in literature. The presence of vocabulary in the fourth rank was somewhat predictable, given that it is a language sub-skill that can be taught/learned/studied in chunks or components on the social network (Fornara & Lomicka, 2019).

Research contexts

Countries

The analysis revealed that research on Instagram and ELL has involved participants from 146 distinct countries. Among these, and dissimilar to the findings of previous reviews (cf. Barrot, 2022; Nasution, 2023), Indonesia stands out significantly, with 74.6% of the RAs, totaling 109 studies, originating from this country. While Indonesia holds a prominent position, the landscape of research has also seen contributions from other countries. Saudi Arabia accounts for 19.1% of the total research output, contributing nine RAs. Other countries contributing to this field include Malaysia, with eight RAs, and Iran, which has produced seven studies. Türkiye and the United States each contributed two articles, showcasing their involvement in this area of research. A small percentage, only 6.1%, is attributed to several additional countries. This includes one RA each from Pakistan, Japan, Australia, Afghanistan, Kazakhstan, as well as Nigeria, Brazil, and Chile.

Settings

The majority of the research settings examined in this analysis are characterized by EFL, which constitutes a significant 97 instances, amounting to 66.4% of the total settings identified. Following EFL, English as a Second Language (ESL) appears as the second most common setting with 9 occurrences, representing 6.1%. The combination of both EFL and ESL settings is also present, with 7 studies, accounting for 4.7%. In addition, both English as a Lingua Franca and English as a Third Language were less frequently reported, with each category being represented by one study, which corresponds to 0.6% of the total settings. It is important to highlight that a notable number of the RAs (31, 21.2%) examined did not specify the type of setting in which their research was conducted.

Programs

Throughout various time periods, universities emerged as the primary programs leading research initiatives, totaling 56 studies. This accounts for 38.3% of the total research efforts that focused on the influence of Instagram in the higher-education context of ELL. Following universities, pre-university programs represented the second most active category, with a total of 52 studies, corresponding to 35.6% of the total. In contrast, research conducted in institutions yielded minimal results, with only seven studies, accounting for 4.7%. College-level research was even less prevalent, with only 5 studies, representing 3.4% of the total scholarly output on this topic. It is noteworthy that 21 RAs (14.3%) did not specify the type of program under which the research was conducted.

Learning environments

Interestingly, 63 studies, which account for 43.1% of the total research conducted, have explored the integration of Instagram as a supplementary



learning tool within combined (both physical and virtual) learning environments. However, it is noteworthy that the research focusing on combined learning environments is less prevalent when compared to studies centered on virtual environments, which comprise 83 studies, or 56.8% of the total research.

Participant profiles

Status

A significant majority of the RAs (121, 83%) demonstrated that English language learners were actively engaged in the studies. Evidently, this can be explained by the nature of Instagram users in online academic communities, many of whom are using the platform to acquire English as EFL or ESL. Conversely, there were only 9 (6.1%) studies that featured collaboration between both instructors and learners. Furthermore, there were just 4 studies, accounting for 2.7%, which indicated that instructors played an active role in the research activities. It should be added that 12 RAs (8.2%) did not provide any information regarding the involvement or role of participants.

Participant numbers

Despite the empirical nature of numerous RAs, it was observed that 33 (22.6%) RAs fell short of reporting the number of participants involved in their studies. In the research that provided data on participant numbers, most studies (32%) had relatively small sample sizes, with most participants numbering between 1 and 30. Conversely, 38 (26%) studies reported including between 31 and 60 participants, which may offer a slightly better foundation for generalizing the results. Furthermore, 13 (8.9%) studies accounted for participant numbers ranging from 61 to 90, indicating a modest increase in sample size, which can enhance the validity of the findings. Additionally, it is important to note that 16 (10.9%) studies embraced larger samples, exceeding 90 participants.

Age group

Age was not mentioned in 90 (61.2%) studies, highlighting poor reporting practices in demographic data. Furthermore, 18 (12.2%) studies offered only limited information by categorizing participants based solely on their educational/proficiency level, without providing any specific age range. Among the reviewed studies, 15 (10.2%) included participants classified as young individuals (aged 7 to 17). However, it is essential to point out that the number of young participants was not greater than that of adults who fell within the broader age range of 18 to 70. Additionally, 5 studies featured a diverse participant pool that included both adults and younger individuals, encompassing various age ranges.

Gender

Most RAs (101, 69.1%) did not provide any information regarding the gender composition of their sample groups. Conversely, there were 39 (26.7%) studies that included both male and female participants in their research. These data indicate a notable inclusion of diverse genders in a portion of the studies;

however, they highlight a concerning absence of proper gender reporting in most cases. Furthermore, it is important to acknowledge that there were only a minimal number of studies that focused exclusively on one gender: only four studies were conducted with female participants, while two studies involved only male participants. This suggests that the representation of gender in research remains limited, with a substantial focus on mixed-gender samples or a complete lack of gender data altogether.

First language (L1)

Nearly one-fifth of the articles included some mention of the participants' native languages. Among the studies that provided this information, Indonesian emerged as the most frequently reported L1, identified as the native language for 9 groups of participants, constituting approximately 6 % of the total. Additionally, Persian was noted as the L1 in 5 (3.4%) studies and Arabic appeared in 4 (2.7%). Furthermore, the findings highlighted that Turkish and Malay were also present, each accounting for 1.3% of the total RAs examined. In 9 (6.1%) studies, participants were reported to have diverse linguistic backgrounds.

Proficiency level

A precise measurement or clear reporting of learners' English language proficiency was absent in 117 (80%) RAs. In the ones reported, the participants' proficiency level was low to high intermediate in 9 (6.1%) studies. Moreover, there were 6 (4.1%) studies where participants were classified as beginners. Only 3 studies included advanced learners. The analysis also indicated that the participants exhibited a mixed range of English language proficiency in 11 (7.5%) studies.

Methodological and theoretical considerations

Research methodology. The methodological orientations of RAs that examine the role of Instagram in the context of ELL are summarized in Table 3.

Table 3. Research methodologies adopted in Instagram-related RAs

Research methodology	Raw frequency n	Percentage %
Quantitative	42	28.7
Qualitative	41	28
Eclectic	36	24.6
Mixed-methods	13	8.9
Unspecified	14	9.5
Total	146	100

Note. "Eclectic" studies combine quantitative and qualitative data and analysis but with no specific mention of mixed-methods. "Mixed-methods" applies if the authors clearly utilize this term in the text of the RAs.

Unlike the results of similar studies which have been conducted on the entirety of CALL (e.g., Gillespie, 2020; Choubsaz et al., 2024) and MALL (e.g., Lai, 2019), as well as social media platforms (Barrot, 2018), attesting to the dominance of quantitative methodology, our findings indicate that authors of Instagram-related RAs favor both quantitative and qualitative orientations somewhat equally. Other significant findings can be the high weight of eclectic methodology (i.e. a mix of quantitative and qualitative methodologies) and the recent upsurge in mixed-methods research for data collection and analysis. To understand their depth more clearly, a second-round analysis was conducted on the 36 RAs that employed the eclectic methodology. Details can be observed in Table 4.

Table 4. Breakdown of the eclectic methodology

Eclectic methodology	Raw frequency n	Percentage %
QUAL + QUAN	19	52.7
QUAL + quan	13	36.1
QUAN + qual	4	11.1
Total	36	100

Note. Upper-case letters show the heavier weight of the adopted methodologies.

This breakdown highlights the varied methodological orientations and illustrates a spectrum of methodologies with equal weight (52.7%) utilized within the eclectic framework. It also depicts how some researchers (36.1%) favor a focus on understanding the subjective aspects and some (11.1%) place emphasis on numerical data and statistical analysis.

Research theories, approaches or framework . A total of 33 (22.6%) RAs did not explicitly adopt a defined theory, approach or framework in their investigations; 97 (66.4%) studies, however, adopted one as part of their research methodology/to frame their work. Additionally, 16 (10.9%) RAs incorporated more than one theoretical perspective to guide their inquiries but are not accounted for here for the sake of homogeneity in data presentation. The identified recurring theories are arranged in Table 5, organized from the most prevalent to the least.

Table 5. Underlying research theories, approaches or framework in Instagram-related RAs

Prevalent (≥ 2%)	Sociocultural (48, 37.5%); Interactionist (24, 18.7%); Collaborative Learning (11, 8.5%); Communicative Competence (8, 6.2%); Constructivism (7, 5.4%); Cognitive Psychology (5, 3.9%); Self-directed Learning (3, 2.3%); Activity Theory (3, 2.3%); Perception Theory (3, 2.3%);
Less prevalent (1–1.9%)	Project-based Learning (2, 1.5%); Technology Acceptance Model (2, 1.5%); Digital Learning (2, 1.5%);
Least prevalent (< 1%)	Output Hypothesis (1, 0.7%); Encoding-decoding Model of Communication (1, 0.7%); Acquisition Theory (1, 0.7%); Artificial Intelligence (1, 0.7%); Learner Autonomy (1, 0.7%); Information and Communication Technology (1, 0.7%); Error Analysis Framework (1, 0.7%); SWOT Analysis Approach (1, 0.7%); Theory of Reasoned Action (1, 0.7%); Collective Scaffolding (1, 0.7%).

As can be observed in Table 5, the widely adopted SLA-related theories, such as sociocultural (48, 37.5%) and interactionist (24, 18.7%) dominate the research on Instagram. After all, the field of CALL and all its sub-fields have always been under the impression of SLA as their so-called ‘parent field’ (Hubbard & Colpaert, 2019). Considering the interactive nature of Instagram as a social media platform, it is not surprising that theories such as collaborative learning (11, 8.5%), communicative competence (8, 6.2%) and constructivism (7, 5.4%) have also played a part in framing the theories of some RAs.

5. Discussion

This study synthesized the literature published on Instagram as an ELL environment in peer-reviewed scholarly journals from 2010 to 2024. All in all, the retrieved data from the journals indexed in Google Scholar show a growing interest in the adoption of Instagram in educational contexts and a rising enthusiasm of the academic community to facilitate ELL using the features of the social media platform. Moreover, the analysis of the targeted RAs yields encouraging results, such as a move from no published scholarly research on Instagram in the early 2010s to almost 150 RAs in the early 2020s. This increasing publication trend over only 15 years, in the journals we targeted, demonstrates how ELL through Instagram adoption has emerged, evolved and shaped as a form of social media-assisted language pedagogy (Hu et al., 2024). This growth in published literature can be attributed to the role active Instagram users play, their constant presence on social media and the popularity of the platform among the youth. This presence and high screen time, particularly among millennials (those born between 1980 and 1994) plus generation Z English learners (those born between 1995 and 2015), might be among the reasons that educators adopt social media such as Instagram as learning platforms and scholars show interest in researching them (Statista, 2020; Barrot, 2022).

Regarding the types of published RAs, the high weight of empirical papers and the low weight of other types of RAs (e.g., theoretical, descriptive and review) can be considered as a predictable result. This is because in social

media-assisted language pedagogy, like other sub-fields of CALL, there is a tendency for researchers to establish empirical projects, examine the users' knowledge, skills or perception of adopting Instagram to report its efficacy and impact on ELL (Choubsaz et al., 2024). In fact, previous research indicates that the bulk of empirical projects on the application of Instagram has deepened our understanding of this social media network, leading to the identification of four aspects of innovative technology, namely multimodality, mobility, instantaneous participation, and interactivity, which are all unique to the platform (Lee, 2023). That is probably why researchers and educators, instead of focusing on conjecture/position papers or description of Instagram-related processes and models, have shown more willingness to explore more of such inherent features and reach out to more learners to engage them in a more interactive ELL experience (Barrot, 2022).

Investigated language skills and sub-skills

Addressing the first research question on the most investigated skills and sub-skills, this synthesis reveals that Instagram has been extensively adopted to improve an integration of language skills, followed by writing, speaking and vocabulary. Confirming the findings of previous syntheses (e.g., Barrot 2018; Barrot, 2022; Nasution, 2023; Tayari Ashtiani et al., 2024), our investigation attests to increased concentration of Instagram-related RAs on productive language skills, specifically writing; the result that might be linked to characteristics that the platform exhibits – if used suitably – and the ways users leverage its digital affordances. In essence, the nature of social media orients users, leading them to perceive and utilize its technological features to establish language-related and pedagogical practices (Barton & Potts, 2013). Maintaining the same stance, Barrot (2022) asserts that social media such as Instagram can be seen and used by English language learners as a rhetorical space for not only writing, but also speaking, in both its formal and informal forms. After all, Instagram and its multimodality, instantaneous participation, and interactivity features pave the way for users to practice discourses (e.g., conversational and persuasive) and literacies (e.g., media and digital), to work on meaning negotiation through online posts and image sharing (Fornara & Lomicka, 2019).

However, unlike the results of the syntheses mentioned, our findings shed more light on the role of Instagram in developing an amalgam of language skills and sub-skills. To elaborate, Instagram's presence, as an engaging platform for ELL, has been able to offer a wide variety of online activities that are based on the concepts of socializing and sharing, including Stories, Reels, Hashtags, Polls and Comments. Tayari Ashtiani et al. (2024) discuss that the diverse affordances of Instagram have enabled learners to show more confidence and be more motivated to write, speak, listen and practice new vocabulary in English, particularly if they are introvert or reserved in face-to-face ELL classes. Similarly, Lee (2023) highlights the instant real-time communication feature of Instagram to argue that the platform “encourages users to simultaneously use and produce the language”, a feature that takes “learning beyond

a hierarchical teacher-student context” (p. 421). On top of the concept of ubiquitous learning, our findings also enhance the realization of algorithms that are unique to Instagram. As we know, the platform, when adopted for ELL, provides an outlet for sharing information, expressing feelings and building communities. With its growing use, Instagram’s ‘public sharing’ feature has assisted forming groups of learners that have a mastery of basic skills and sub-skills and therefore created opportunities to practice ELL outside of the class meetings (Fornara & Lomicka, 2019). However, despite the identified benefits for mastering language skills and sub-skills, this synthesis also highlights Instagram’s limitations. This includes the highly visual culture – and not much textual – of the platform. In other words, researching Instagram has proven that low-proficiency learners might face difficulty making sense of the shared ELL images and posts “without considering the unity of visual and textual analysis” (Fornara & Lomicka, 2019, p. 199); a feeling that might impact community building and weaken their online social presence.

Highlighted research contexts and participants’ profiles

To address the second research question, the highlighted research contexts and participant profiles, the synthesis reveals that a significant number of RAs have emerged from expanding circle countries with Indonesia as a notable participant and been conducted in the university programs of EFL settings. To elaborate, somehow contrary to results of the recent syntheses (e.g. Barrot, 2018; Barrot, 2022), Asia, and not the inner-circle countries in Europe and the Americas, leads the research on Instagram. The domination of EFL countries like Indonesia, Saudi Arabia and Malaysia (as an ESL setting), can be partly attributed to the active number of Instagram users in these countries and partly indicative of a deeper integration of English into their societal and educational frameworks. Additionally, the link between the prevalence of Instagram and the body of Instagram-related research in the mentioned countries might also be influenced by cultural factors, technical considerations and even linguistic dimensions (Barrot, 2022). In terms of programs, our findings align closely with those of Tayari Ashtiani et al. (2024), signifying the dominance of university and pre-university programs that are established in virtual (rather than physical) learning environments. This finding is to some extent understandable as university and pre-university English language learners are considered adults (aged 18 and above) and that makes researching them undemanding. Additionally, adult language learners that come to ELL classes with a clear objective find it easier to practice multiple language areas and literacies on the platform, be members of Instagram-related ELL communities and develop as sense of intercultural competence as well as socio-pragmatic awareness (Solmaz, 2018). However, this also indicates the scarcity of research on K-12 language learners, the group that are believed to live the social media (Elkatmış, 2024). Given the high weight of millennials and generation Z learners as active users of Instagram (Barrot, 2022), more research needs to address

the adoption of Instagram in programs and learning environments dedicated to these categories of learners.

Participant-related findings indicate that the RA mainly include adult learners with different L1 backgrounds and mixed proficiencies in English. To illustrate, in terms of the status, numbers and age group of the research participants, the majority were learners (active users adopting Instagram for ELL) in small or medium size learning environments in the age range of 18 to 70. As a feature that has not been addressed in the existing syntheses, these findings cast more light on the most researched participants in Instagram-related RAs to narrate that other groups of participants (e.g. student-teachers), large sample sizes (e.g. 90+ participants) and other age-groups (e.g. teenagers) have somehow remained under-researched. Moreover, the reports on the gender, L1 and proficiency level of the participants have indicated that both male and female learners have been able to play an active role in their social media -assisted language learning experience. Additionally, the diverse speakers of first languages (led by Indonesians) with varied proficiencies (low to advanced) could be a testimony to the reach of Instagram to a wide range of English language learners as the third world's 3rd most downloaded mobile app (Sensortower, 2025). Notwithstanding, a significant – and perhaps discouraging finding – is poor reporting practices of key contextual and demographic information in Instagram-related RAs, a long-standing issue that have also been observed in social media-assisted language learning (e.g. Barrot, 2022) and CALL synthetic studies (e.g. Choubsaz et al., 2024).

Applied research methodologies and underpinning theories

To respond to the third research question, the applied research methodologies and the underlying theories, the current synthesis reveals a significant trend in the utilization of both quantitative and qualitative research methodologies and attests to the dominance of SLA-driven theories in Instagram-related published research. With regards to the methodologies, the seemingly balanced adoption of both quantification and qualification to collect and analyze data stand out. This, from one side, can be contributed to the nature of CALL research: when a new technological gadget or a social media platform or even an app – in this case, Instagram – is launched, many researchers and educators adopt a quantitative approach to gather objective data and provide empirical evidence to measure its effectiveness as an ELL tool (Al-Fadda, 2020; Al-Fadda et al., 2022). In other words, CALL and social media-assisted language learning researchers have recognized Instagram as an emerging platform in its early years and researched it to collect scientific and measurable information (see Yadegarfar & Simin, 2016, as an example of such a study). From the other side, researchers have favored qualitative research as well (cf. Barrot, 2022) and concentrated on observations, interviews, case studies, etc. to gain deeper insights into the personal experiences of learners while using Instagram for ELL (see, for instance, Sánchez-Moya, 2023). Equally important, the frequency of eclectic and mixed-methods research over the most recent years, sometimes with higher weight

on quantification or else qualification, is an encouraging finding since it can cautiously suggest that the field is moving towards a level of development, if not maturity (Barrot, 2022). Additionally, it also highlights the growing interest in social media-assisted ELL for asking more complex research questions and then designing more sophisticated research designs to address them.

Considering the underpinning theories, roughly 33% of the RAs reviewed did not specify a theoretical framework to establish their research or present a theory in an unclear manner. This absence of theoretical grounding could be attributed to the novelty of Instagram in the context of ELL in its early years (i.e. 2013 to 2016), during which the platform was still under exploration as a viable option for enhancing ELL, leading to limited scholarly development in terms of established theories. On the flip side, the presence of atheoretical studies might be associated with a long-standing research issue i.e. little explicit engagement with dominant theories in CALL (cf. Choubsaz et al., 2024); the issue that seemed to be concerning in early stages of researching Instagram but has become less pronounced in recent years with the emerging dominance of theories such as Technology Acceptance Model (Barrot, 2022). Overall, confirming the preliminary findings of Solmaz (2018) and Barrot (2022), our observations indicate that despite the minimum engagement with theories and approaches in the RAs of the third period (2016-2018), subsequent periods (2019-2014) have seen a rise in the application of SLA theories, particularly sociocultural and interactionist frameworks. This indeed can be an encouraging finding as it shows that authors are currently better equipped to connect their findings to existing educational theories. Likewise, the appearance of well-established theories such as collaborative learning, communicative competence, and constructivism in Instagram-related research could be attributed to the nature of the platform as social media and a facilitator of social interaction (Al-Fadda et al., 2022).

6. Mapping the Future of Instagram-Related Research

This research synthesis cast light on the investigated language skill and sub-skills, and examined the contextual, methodological as well as theoretical considerations of peer-reviewed Instagram-related RAs. Collectively, the findings are encouraging as they suggest a dynamic and evolving landscape for research related to this popular social media app. Additionally, they highlight its potential as a visually appealing and interactive platform for ELL and skill development (Meirbekov et al., 2024). However, despite the numerous advantages Instagram offers, reading within the lines of its research indicates that the platform poses challenges for ELL such as the risk of fostering digital anxiety, addictive behavior and distraction, and the fear of receiving criticism or even hate speech for mistakes in language use (Al Sharoufi & Sultan, 2024). In terms of research implications, one of the primary concerns that needs to be addressed is an emphasis on a wider range of research topics. As of now, there appears to be a focus on writing and speaking skills, while crucial language components such as grammar and listening, as well as significant concepts linked to ELL, such as culturology of language (Pishghadam, et al., 2020) in

social media or digital content creators' impacts (Shahid et al., 2024) receive inadequate attention. Additionally, there is a noticeable scarcity of research conducted in inner-circle countries, which are often considered influential in the field of CALL (Mohsen et al., 2024). Moreover, poor practices, both in reporting the demographic information of the research participants and the SLA/CALL-driven theories to justify the conducted research, could be named as other pressing issues that need to be addressed by CALL researchers. In closing, and to mention the study limitations, our methodology was designed to only target published Instagram-related RAs in peer-reviewed journals. For obvious reasons, it is simply not feasible to examine and synthesize hundreds of papers individually. However, the observations mentioned can be tested against other sources, databases or even a selection of CALL or non-CALL journals.

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