Intrinsic Motivation and EFL Learners' Achievement in Online Instruction: A Systematic Review

Abbas Ali Rezaee[1]* , Alireza Ghaneolhosseini[2]

[1] Department of English Language and Literature, Faculty of Languages and Literature, University of Tehran, Tehran, iran
[2] Department Of English Language And Literature, Faculty Of Languages And Literature, University Of Tehran, Kish International Campus, Kish Island, Iran.

* Corresponding author email address: aarezaee@ut.ac.ir

A r t i c l e I n f o

Article type:
Original Research

A B S T R A C T

Purpose: This systematic review aims to examine the role of intrinsic motivation (IM) in enhancing English as a Foreign Language (EFL) learners' academic achievement within online instructional contexts.

Methods and Materials: A systematic review methodology was employed following PRISMA guidelines to identify, screen, and synthesize relevant empirical studies published between 2012 and 2022. Inclusion criteria encompassed peer-reviewed studies conducted in English, focusing on the relationship between IM and EFL achievement in online learning environments. Fourteen studies met the inclusion criteria after screening 3,042 initial records across multiple academic databases, including ProQuest, SAGE, Wiley Online Library, Springer, ScienceDirect, and Google Scholar. The selected studies featured diverse methodological designs—quantitative, qualitative, and mixed-methods—and were assessed for quality using standardized tools. The data were synthesized using descriptive analysis to identify patterns, key outcomes, and influencing factors.

Findings: The review found consistent evidence of a positive correlation between IM and EFL learners' achievement in various online learning tasks, including writing, reading, speaking, vocabulary acquisition, and grammatical proficiency. Learners with higher IM demonstrated stronger engagement, self-regulation, and satisfaction with online courses. Key internal factors influencing IM included personal interest, self-efficacy beliefs, intrinsic value of tasks, and future aspirations. External factors such as teacher support, peer interaction, technological tools (e.g., WhatsApp, YouTube, Babbel), and learning environments also significantly affected IM. Conversely, lack of IM was associated with decreased learner confidence, poor performance, and disengagement.

Conclusion: Intrinsic motivation is a critical determinant of academic success in online EFL instruction. Fostering IM through learner-centered strategies, meaningful task design, and supportive environments can enhance engagement and performance. This review provides empirical evidence to inform educators, curriculum developers, and policymakers on effective approaches to strengthen IM in virtual language learning contexts.

Keywords: EFL achievement, EFL learners, intrinsic motivation, online instruction, systematic review.

1. Introduction

The global shift toward online education, accelerated by the COVID-19 pandemic, has fundamentally transformed the landscape of English as a Foreign Language (EFL) instruction. As online platforms have replaced traditional classrooms, the importance of learner motivation—particularly intrinsic motivation (IM)—has come into sharper focus (Faramarzi Babadi et al., 2024). Intrinsic motivation, defined as the internal drive to engage in an activity for its own sake due to interest or enjoyment, is widely regarded as a central component in the acquisition of language skills and academic achievement in autonomous learning environments (Deci & Ryan, 2000; Kokabi Rahman et al., 2023; Miri Rami et al., 2022). The shift from face-to-face to digital modes of instruction has raised critical questions about how IM operates and influences learner outcomes in virtual EFL contexts.

The centrality of IM in language learning is supported by self-determination theory, which posits that fulfillment of basic psychological needs—autonomy, competence, and relatedness—leads to optimal motivation and performance (Deci & Ryan, 2000). In the EFL context, learners who are intrinsically motivated are more likely to exhibit higher engagement, deeper processing of linguistic input, and sustained efforts in acquiring target language skills (Alcaraz Cárceles, 2018; Shan, 2020). Moreover, IM is increasingly recognized not only as a predictor of academic success but also as a buffer against demotivating factors inherent in online learning environments, such as lack of real-time feedback, technological difficulties, and feelings of isolation (Mohtar & Md Yunus, 2022; Yanzhi, 2022).

In recent years, a growing body of literature has examined the effects of IM on learner performance in online language education. These studies consistently highlight the positive association between IM and language achievement across various dimensions, including writing proficiency, vocabulary development, reading comprehension, and speaking fluency (Amin, 2019; Bailey et al., 2021; De Lozier, 2019; Perwitasari et al., 2021). For instance, learners with higher IM tend to approach writing tasks with more creativity and persistence, ultimately producing more coherent and higher-quality outputs (Amin, 2019). Similarly, intrinsically motivated readers demonstrate more extensive and focused engagement with reading materials, which enhances their comprehension and enjoyment (De Lozier, 2019).

Several empirical investigations have also emphasized how IM fosters learner autonomy, self-efficacy, and resilience—attributes that are especially critical in online environments where students must manage their time and learning strategies independently (Adara & Puspahaty, 2021; Teng et al., 2021; Wang, 2023). As students navigate the demands of asynchronous instruction, intrinsic motivation becomes a catalyst for continuous participation, self-regulation, and academic persistence (Li, 2023; Peechapol et al., 2018). In this context, the role of technological platforms such as WhatsApp, YouTube, Moodle, and Babbel has also garnered scholarly attention, with findings suggesting that these tools can either promote or hinder IM depending on how they are integrated into instruction (García-Sánchez & Luján-García, 2016; Imamyartha et al., 2022; Oliveira et al., 2021; Perwitasari et al., 2021).

Nonetheless, IM does not function in isolation; it is shaped by a range of internal and external factors. Internally, learners' self-concept, personal interest, intrinsic value attributed to learning tasks, and future academic or career goals play pivotal roles in sustaining motivation (Fang, 2020; Tabitha & Pramono, 2022). Externally, supportive instructional strategies, engaging learning environments, and constructive teacher feedback are instrumental in cultivating and maintaining IM (Adara & Puspahaty, 2021; Nurhidayah et al., 2023; Phuong, 2022). The interplay between these factors is particularly pronounced in the online setting, where the absence of immediate social and pedagogical cues requires greater reliance on individual motivation and environmental scaffolding (Ali, 2022; Alonso et al., 2023).

Despite the breadth of research available, the literature remains fragmented in terms of scope, methodological rigor, and synthesis. Several studies rely on single-case or small-sample investigations, limiting the generalizability of findings (Ali, 2022; Fang, 2020). Others fail to distinguish between intrinsic and extrinsic motivation, resulting in conceptual ambiguities that hinder the development of targeted pedagogical interventions (Chowdhury et al., 2021; Kaid Mohammed Ali, 2022). Moreover, while numerous primary studies have examined motivational dynamics in EFL online learning, few have systematically reviewed and synthesized this body of knowledge in accordance with evidence-based methodologies such as PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Aromataris & Pearson, 2014; Tricco et al., 2011).

To address this gap, the present study conducts a systematic review of empirical research on intrinsic motivation and its impact on EFL learners' achievement in online instructional contexts. This review is guided by two primary research questions: (1) What is the overall relationship between intrinsic motivation and EFL learners' academic achievement in online learning? (2) What internal and external factors influence learners' intrinsic motivation in digital instructional environments?

This study draws upon diverse sources and research designs—including correlational analyses, qualitative interviews, and mixed-methods approaches—to construct a comprehensive synthesis of current knowledge. Following systematic review protocols as outlined by Cochrane guidelines (Higgins & Green, 2011), it employs a transparent and replicable methodology, including rigorous inclusion/exclusion criteria, multiple database searches, and independent screening processes. By doing so, it seeks not only to identify consistent patterns across the literature but also to uncover gaps, contradictions, and areas for future inquiry.

The findings of this review have significant implications for theory and practice. Theoretically, they contribute to a nuanced understanding of how IM functions in the online EFL learning ecosystem, particularly in relation to cognitive engagement, self-regulated learning, and digital literacy. Practically, the insights gained can inform the design of instructional strategies, technological tools, and teacher training programs aimed at enhancing learner motivation and achievement in virtual language classrooms. For example, scaffolding learner autonomy through goal-setting, incorporating gamified elements, or aligning course content with students' interests may serve to strengthen IM and, in turn, improve learning outcomes (Alonso et al., 2023; Kost, 2003).

Importantly, this review also considers contextual variables such as gender, academic level, and cultural background, which may moderate the relationship between IM and achievement. Some studies have shown that male and female learners respond differently to motivational stimuli in online contexts, while others report no significant gender-based differences (Ali, 2022). Furthermore, learners from different cultural settings may possess varying degrees of educational autonomy, expectations, and perceptions of teacher authority—all of which influence motivational patterns (Wang, 2023; Yanzhi, 2022).

In summary, the digital transformation of education has placed a renewed emphasis on understanding the motivational mechanisms that drive learner performance in online EFL contexts. As online learning becomes a permanent fixture in global education systems, especially in response to the Fourth Sustainable Development Goal on inclusive and equitable quality education (Alonso et al., 2023), investigating the role of intrinsic motivation becomes not only timely but essential. This systematic review endeavors to provide a coherent and empirically grounded account of how IM contributes to academic achievement among EFL learners in virtual environments, thereby offering valuable insights for educators, curriculum designers, and policymakers alike.

2. Methods and Materials

2.1. Eligibility Criteria

To ensure a comprehensive and methodologically rigorous systematic review, explicit eligibility criteria were established to guide the selection of studies in alignment with the research objectives and to guarantee the inclusion of high-quality empirical evidence. In this review, the inclusion criteria specified that eligible studies must utilize experimental, quantitative, or qualitative research designs and be published between 2012 and 2022. No restrictions were imposed regarding geographic origin, allowing studies from any country to be considered. Additionally, participants of any age or gender were eligible. To ensure sufficient analytical power, studies were required to include a minimum of five participants. Studies were also deemed eligible if they partially or indirectly reported outcomes relevant to the variables addressed in the research questions. Another essential criterion was the instructional context; studies had to focus specifically on online EFL instruction. For the purposes of this review, online instruction refers to educational activities primarily delivered via digital platforms, virtual learning environments, or internet-based tools.

Exclusion criteria were applied to preserve the relevance and methodological integrity of the review. Studies focusing primarily on extrinsic motivation were excluded, as the review specifically examined the impact of intrinsic motivation (IM) on EFL learners' academic achievement. Studies that did not involve online instruction as the principal mode of delivery were also excluded. Moreover, articles not published in English or published outside the defined timeframe (2012–2022) were omitted to ensure the currency and accessibility of findings. Finally, duplicate records were removed to eliminate redundancy. By

implementing these exclusion parameters, the review aimed to present a precise and current synthesis of research investigating the role of IM in the academic achievement of EFL learners within online learning environments.

2.2. Information Sources

To ensure the thoroughness and scholarly rigor of this systematic review, multiple information sources were employed to identify relevant studies and research findings. A comprehensive search was conducted across leading academic databases, including ProQuest, SAGE Journals, Wiley Online Library, ScienceDirect, Springer, and Google Scholar. Targeted keywords related to EFL learning, intrinsic motivation (IM), online instruction, and academic achievement were used to retrieve pertinent literature. These databases were selected for their extensive collections of peer-reviewed publications in education, psychology, and applied linguistics, thereby providing a robust foundation for the review. Google Scholar was used as a supplementary resource to enhance the inclusivity of the search and to identify additional studies related to IM in online EFL instruction.

Furthermore, the reference lists of the selected studies were carefully reviewed using backward citation tracking to identify additional relevant literature potentially omitted during the database searches. This technique proved effective in uncovering previously published research aligned with the review's objectives.

By leveraging a range of academic sources and citation tracking methods, the review sought to minimize selection bias and enhance analytical rigor. Each study underwent a quality evaluation process to ensure the inclusion of methodologically sound research, thereby increasing the validity and reliability of the overall findings.

2.3. Search Strategy

A structured search strategy was designed to systematically identify studies relevant to the research objectives. The process began with the identification of specific keywords and phrases such as "intrinsic motivation (IM)," "EFL learners," "achievement," and "online instruction." These keywords were combined using Boolean operators (e.g., AND, OR) to formulate effective search strings. For example, the string "IM AND EFL learners' achievement AND online instruction" was applied across various discipline-specific databases related to education, applied linguistics, psychology, and instructional technology. Searches were conducted within titles, abstracts, and keywords to enhance precision.

To broaden the search and increase its sensitivity, advanced search techniques such as truncation, wildcards, and proximity operators were employed where permitted. During the preliminary screening phase, inclusion criteria were applied to filter search results. These included publication between 2012 and 2022, English-language texts, and empirical or experimental research designs. This ensured that the search yielded current, high-quality studies relevant to the research questions.

Through the implementation of this systematic search strategy, the review aimed to assemble a comprehensive and robust body of literature on the relationship between IM and academic achievement among EFL learners in online instruction.

2.4. Selection Process

The initial screening process involved assessing the titles and abstracts of retrieved studies for relevance to the research focus. Two independent reviewers conducted this preliminary evaluation to determine whether studies met the eligibility criteria. Discrepancies or uncertainties were resolved through discussion, with the option of consulting a third reviewer to reach consensus. Inclusion criteria were then applied to ensure alignment with the review's core objectives. These criteria considered Population (EFL learners in online instruction), Outcome (IM-related academic achievement, assessed via grades, test scores, or learners' self-perceptions), Intervention (online instructional settings), Study Design (experimental, quasi-experimental, observational, and qualitative research), and Language (English-language publications).

Exclusion criteria further refined the selection process by removing studies that did not meet the defined standards or that contained overlapping data. Duplicate publications and redundant studies were also excluded to ensure the uniqueness of the final dataset.

Following the abstract screening, full-text reviews were conducted independently by both reviewers to verify the alignment of each study with the inclusion criteria. Any disagreements were addressed through discussion or third-party adjudication. Methodological quality was critically assessed using criteria such as research design, data collection, and analysis methods. The Newcastle-Ottawa Scale was employed to assess the risk of bias and maintain methodological rigor.

The findings of the selected studies were synthesized to identify patterns, trends, and associations between IM and EFL learners' achievement in online settings. This process involved comparing outcomes, designs, and limitations across studies. By adhering to this rigorous selection process, the review ensured that only high-quality, relevant research was included, thereby enhancing the validity and generalizability of its conclusions.

2.5. Data Collection Process

An extensive database search was conducted using ProQuest, SAGE Journals, Wiley Online Library, ScienceDirect, Springer, and Google Scholar to identify relevant studies. Search terms related to intrinsic motivation (IM), EFL learner achievement, and online learning were applied. A standardized data extraction form was developed to ensure consistency and transparency throughout the review process. This form captured critical study attributes such as author, year of publication, sample size, demographic characteristics, instructional methods, outcome measures, and other pertinent variables.

Eligibility criteria were clearly defined prior to the data collection phase. Studies that focused on IM in online EFL courses and reported measurable indicators of academic achievement were included. Both qualitative and quantitative designs—including experiments, surveys, and case studies—were considered. Reviewers systematically screened the titles, abstracts, and full texts to ensure all included studies adhered to these predefined criteria.

2.6. Data Items

In conducting a systematic review, the identification of relevant outcome variables is essential to structuring the analysis and maintaining coherence with the research objectives. Predefining outcomes and study characteristics facilitates clarity and consistency during data extraction and interpretation. When necessary, efforts were made to contact original authors to clarify missing data or obtain additional information relevant to the review's aims.

In this review, academic achievement served as the primary outcome variable. Achievement was operationalized as measurable learning outcomes and performance indicators demonstrated by EFL learners in online settings. This included language proficiency, comprehension, writing quality, vocabulary acquisition, and overall mastery of English. The objective was to explore the extent to which intrinsic motivation contributes to such academic outcomes.

In relation to IM, prior research has identified various contributing factors. For example, Deci and Ryan (2000) emphasized the importance of intrinsic interest and its impact on learner engagement and performance. All included studies were evaluated to determine whether their reported outcomes corresponded to the review's domains of interest. However, due to variation in measurement tools, assessment timing, and statistical methods, not all findings could be uniformly included in the synthesis.

2.7. Synthesis Methods

To ensure a methodologically sound synthesis of the collected evidence, a rigorous and transparent approach was employed. After completing the database searches, studies were screened based on title and abstract relevance. Irrelevant studies were excluded, and the remaining full-text articles were reviewed in detail. Key data—such as sample characteristics, instructional interventions, IM measures, and achievement outcomes—were systematically extracted and recorded.

Given the heterogeneity in study designs and outcome measures, a descriptive synthesis approach was adopted. This allowed for a qualitative analysis of the findings, with a focus on identifying patterns and thematic connections. The review sought to maintain objectivity by equitably evaluating all included studies, regardless of methodological approach.

The strengths, limitations, and broader implications of the findings were discussed, with attention to the consistency of results across diverse educational contexts. Recommendations for future research and instructional practice were provided to inform ongoing efforts to support IM in online EFL learning environments.

2.8. Quality Assessment and Risk of Bias

The methodological quality of the included studies was evaluated using the Mixed Methods Appraisal Tool (MMAT), which is designed to assess the rigor of qualitative, quantitative, and mixed-methods research. The MMAT enabled a comprehensive assessment of each study's design, including clarity of research aims, validity of data collection procedures, and appropriateness of data analysis techniques.

Qualitative studies exhibited strong methodological integrity, with clearly articulated research questions and

thorough analytical procedures. Quantitative studies demonstrated moderate to high quality, supported by appropriate statistical analyses and valid research designs. Mixed-methods studies effectively integrated qualitative and quantitative elements, capturing the complexity of intrinsic motivation in EFL learners' online experiences.

The review found an overall low risk of bias across the included studies. This outcome is attributed to the consistent application of the MMAT and the adherence to high methodological standards throughout the selected literature. The assessment considered critical aspects such as sample selection, research design, and data handling procedures. Through this comprehensive quality appraisal, the review ensured that its findings are grounded in methodologically robust and credible research.

3. Findings and Results

3.1. Study Selection

To conduct a systematic and targeted search, clearly defined inclusion and exclusion criteria were applied to ensure the relevance and methodological rigor of the selected studies. The inclusion criteria required studies to: (a) investigate the role of intrinsic motivation (IM) in English as a Foreign Language (EFL) learners' achievement, (b) involve online instruction as the primary mode of delivery, (c) include participants identified as EFL learners, (d) present empirical findings (e.g., quasi-experimental or observational research), and (e) be published in peer-reviewed academic journals. Studies were excluded if they: (a) were not published in English, (b) constituted review articles, meta-analyses, or systematic reviews, (c) were conference abstracts, theses, or dissertations, or (d) lacked sufficient data or presented ambiguous research designs.

Following the removal of 158 duplicate records, 134 reviews, and 29 non-English articles, the two reviewers independently screened the titles and abstracts of the remaining 2,721 records. During this screening process, 2,683 studies were excluded due to inconsistencies between their titles and abstracts in relation to the intervention and outcome variables of interest. This evaluation was guided by the predetermined inclusion and exclusion criteria. In cases of disagreement or uncertainty, discussions were held to reach consensus, and a third reviewer was consulted when necessary. Studies clearly failing to meet the inclusion criteria were excluded.

The full texts of the remaining 38 studies were then retrieved and examined thoroughly by two independent reviewers. Each article was assessed in detail to confirm alignment with all inclusion criteria. During this phase, 24 studies were excluded due to irrelevance in their full texts. Ultimately, 14 studies met all inclusion requirements and were incorporated into the final comprehensive review. These studies were deemed methodologically sound and directly relevant to the research objectives.

Table 1

PRISMA Flow Diagram
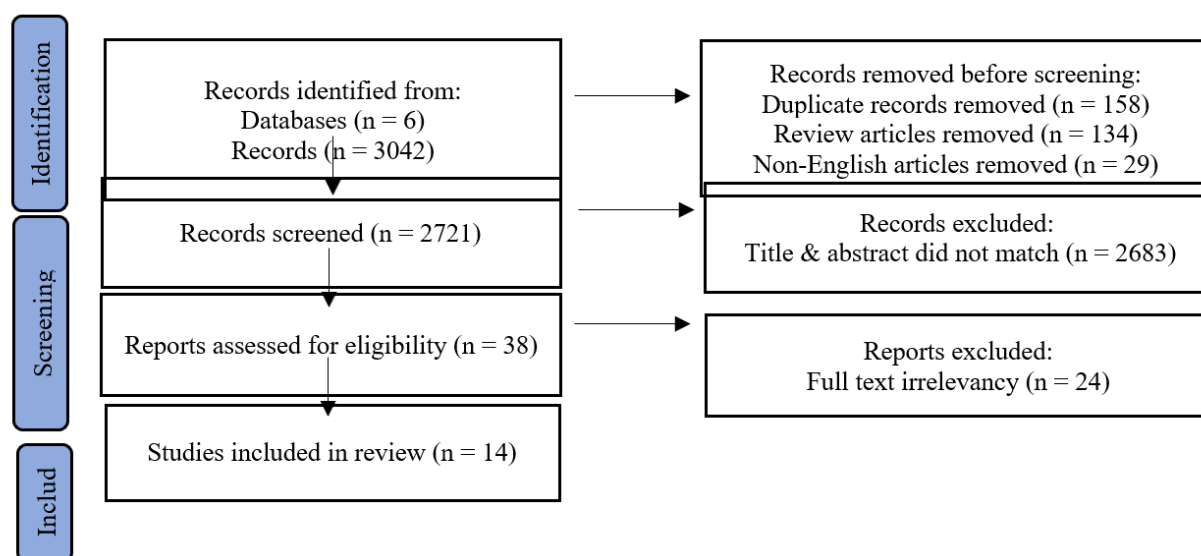
3.2. Results of Syntheses

This systematic review applied a rigorous synthesis procedure to analyze and integrate data from the selected studies. In total, 3,042 records were initially identified through Boolean keyword searches. From these, only 14 studies met the eligibility criteria after screening. A total of 3,028 records were excluded due to duplication, review format, non-English language, or lack of relevance in the full text. Table 2 presents the characteristics and key findings of the included studies.

In response to the first research question regarding the overall relationship between intrinsic motivation and EFL learners' academic achievement in online instruction, the following findings were extracted from the reviewed literature.

3.2.1. Language Proficiency Skills

Several studies specifically investigated the influence of intrinsic motivation on EFL learners' language skill development in online settings. Amin (2019) reported a positive correlation between learners' IM and their writing performance, indicating that students with higher IM were more inclined to produce high-quality written work (Amin, 2019). Similarly, De Lozier (2019) found that intermediate and advanced learners demonstrated greater enjoyment and improved reading performance when intrinsically motivated (De Lozier, 2019). In a study by Perwitasari et al. (2021), YouTube was identified as an effective platform that enhanced learners' speaking skills through IM and satisfaction, fostering meaningful engagement and better comprehension of reliable sources (Perwitasari et al., 2021). Bailey et al. (2021) concluded that IM significantly contributed not only to deeper learning outcomes—particularly in grammar and vocabulary—but also to increased satisfaction with online writing courses (Bailey et al., 2021).

3.2.2. Soft Skills

In addition to language skills, several studies examined the development of soft skills as an indirect outcome of intrinsic motivation in online learning environments. García-Sánchez and Luján-García (2016) found that learners with high levels of IM in ubiquitous learning (U-learning) environments enhanced their communication abilities (García-Sánchez & Luján-García, 2016). Fang (2020) observed that learners with strong IM expressed greater appreciation and acceptance of online learning, suggesting that IM positively influenced learners' attitudes toward virtual instruction (Fang, 2020). Adara and Puspahaty (2021) reported that IM fostered higher levels of engagement, perseverance, and learner autonomy. They emphasized that fostering IM led to meaningful learning experiences, increased curiosity, and heightened passion for language learning (Adara & Puspahaty, 2021). Oliveira et al. (2021), utilizing the Babbel platform, found that many participants identified IM as the primary motivational driver for engaging with the platform. Imamyartha et al. (2022) identified WhatsApp as a tool that promoted IM, which in turn facilitated active learner participation in online environments (Imamyartha et al., 2022). Conversely, Ali (2022) found no significant relationship between IM and learner performance in online platforms (Ali, 2022).

3.2.3. Lack of IM

While most studies emphasized the presence of IM and its benefits, some highlighted the negative impact of its absence. Chowdhury et al. (2021) concluded that a lack of IM posed a significant barrier to language learning, leading to poor learner performance and reduced proficiency. Similarly, Teng et al. (2021) suggested that the absence of both intrinsic and extrinsic motivation in online learning environments contributed to diminished self-confidence and low participation among EFL learners.

In response to the second research question regarding the factors that moderate intrinsic motivation in online EFL instruction, findings were categorized into internal and external influences.

3.2.4. Internal Factors

Several studies identified internal psychological factors as significant moderators of IM. De Lozier (2019) emphasized the role of personal interest in enhancing IM (De Lozier, 2019). Bailey et al. (2021) found that intrinsic value (IV) derived from engaging and meaningful tasks significantly influenced both intrinsic and extrinsic motivation (Bailey et al., 2021). Chowdhury et al. (2021) recommended that educators consider learner motivation during course redesign, as such considerations can enhance learners' sense of accountability and enjoyment (Chowdhury et al., 2021). Teng et al. (2021) identified self-

efficacy beliefs as strong internal determinants of learner motivation in online contexts (Teng et al., 2021). Similarly, Tabitha et al. (2022) highlighted personal interests and future aspirations as crucial contributors to IM (Tabitha & Pramono, 2022).

3.2.5. External Factors

A number of external elements were also found to influence learners' IM in online instruction. García-Sánchez and Luján-García (2016) noted that participation in active and collaborative online learning environments positively affected IM (García-Sánchez & Luján-García, 2016). De Lozier (2019) indicated that the enjoyment of instructional materials significantly enhanced motivation (De Lozier, 2019). In contrast, Fang (2020) found that focusing on grades as external rewards negatively impacted learners' IM (Fang, 2020). Perwitasari et al. (2021) emphasized the role of peer learning and collaborative speaking activities, along with external incentives, in enhancing IM (Perwitasari et al., 2021). Adara et al. (2021) suggested that encouraging instructors, optimistic learning environments, and technological tools contributed meaningfully to learners' IM (Adara & Puspahaty, 2021). Imamyartha et al. (2022) argued that online teaching platforms such as task-based mobile learning (TBML) were more effective when they incorporated tools like WhatsApp to foster IM (Imamyartha et al., 2022). On the other hand, Ali (2022) reported that neither learner gender nor specific online platforms (e.g., infographics, writing tools, drawing applications) significantly affected IM (Ali, 2022). Phuong (2022) concluded that teacher support and the implementation of learner-centered strategies enhanced learners' IM, particularly when learners were actively involved in interactive, teacher-designed activities (Phuong, 2022).

Table 2

Included Studies: Results and Characteristics

Study ID	Author(s)	Study Design	Sample Size / Location	Intervention	Outcome Measure	Results	Factors Influencing IM
1	(García-Sánchez & Luján-García, 2016)	Survey	100 / Spain	Use of Moodle and multimedia tools for EFL tasks and learner support	Survey responses evaluating learning outcomes	Engagement in accessible ubiquitous learning (U-learning) environments enhances English communication skills through learners' IM and interest	Active participation in a collaborative environment enhances IM
2	(Amin, 2019)	Correlational	60 female / Saudi Arabia	Online writing using Desire2Learn tools	Writing Motivation Questionnaire (WMQ) and Writing Performance Test (WPT); analyzed via Pearson correlation	A significant positive correlation exists between learners' IM and their writing performance	N/A
3	(De Lozier, 2019)	Correlational	205 / Japan	Reading performance in online settings	Extensive Reading Test, TOEIC IP scores, and student questionnaires; analyzed via Pearson correlation	Intermediate and advanced EFL learners perform better and enjoy reading more when intrinsically motivated	Personal interest and enjoyment of the material enhance IM
4	(Fang, 2020)	Survey	94 / China	Fully online instruction	33-item questionnaire analyzed via SPSS 23	Strong IM correlates with greater acceptance and appreciation of online learning	Advancement to higher grades can reduce IM, negatively impacting motivation
5	(Perwitasari et al., 2021)	Qualitative Action Research	30 / Indonesia	Use of WhatsApp and YouTube	Students' Perception Questionnaire addressing both intrinsic and extrinsic motivation	YouTube enhances speaking skills and provides intrinsic satisfaction; effectiveness depends on meaningful engagement and critical use of sources	Peer learning, assistance in speaking development, and external rewards
6	(Bailey et al., 2021)	Quantitative Cross-Sectional Survey	88 male & 98 female / South Korea	N/A	Survey results	Students with higher IM report greater satisfaction with online courses. IM supports deep learning,	Intrinsic value (IV) shapes motivation when tasks are perceived as meaningful and

						particularly in grammar and vocabulary, and predicts success in online writing courses	personally rewarding
7	(Adara & Puspahaty, 2021)	Qualitative Semi-Structured Interviews	10 / Indonesia	N/A	Participant perspectives and experiences	IM enhances engagement, persistence, and autonomy in language learning. Fostering IM involves meaningful experiences, curiosity, and learner passion	Supportive teachers, positive learning environments, and technological tools
8	(Chowdhury et al., 2021)	Mixed-Methods	50 / Bangladesh	N/A	Surveys and interview responses	A lack of IM impedes language learning, resulting in lower proficiency	Addressing learners' needs and motivations increases commitment and enjoyment
9	(Teng et al., 2021)	Mixed-Methods	590 / China	N/A	Likert scale surveys and structural equation modeling (SEM) with standardized English tests	Lack of both intrinsic and extrinsic motivation in online settings is associated with reduced learner confidence	Self-efficacy beliefs are key drivers of IM in online language learning
10	(Oliveira et al., 2021)	Sequential Mixed-Methods	59 / Germany	Use of the Babbel language application	Surveys and in-depth interviews	Babbel is perceived as enjoyable, with IM serving as the primary motivation for learners	N/A
11	(Imamyartha et al., 2022)	Quantitative and Qualitative	62 male & 313 female / Indonesia	Use of WhatsApp	Questionnaire responses	WhatsApp fosters learner engagement and supports participation in the online learning community	Incorporating WhatsApp enhances IM in online instruction
12	(Ali, 2022)	Mixed-Methods	72 / Malaysia	N/A	Questionnaire responses	No significant association between IM and English performance using digital platforms	Neither gender nor platform type significantly influences IM
13	(Phuong, 2022)	Qualitative	183 / Vietnam	N/A	Surveys and focus group interviews	IM plays a crucial role in student engagement and participation	Teacher support and personalized teaching strategies enhance IM
14	(Tabitha & Pramono, 2022)	Survey	36 / Indonesia (Surabaya)	N/A	Survey responses		

4.   Discussion and Conclusion

The results of this systematic review provide strong evidence that intrinsic motivation (IM) plays a significant and multifaceted role in enhancing English as a Foreign Language (EFL) learners' achievement in online learning environments. The analysis of 14 empirical studies revealed consistent patterns indicating that students who exhibit higher levels of IM are more likely to engage deeply with language learning tasks, perform better across multiple language domains, and report greater satisfaction with their learning experiences. These findings answer the first research question concerning the overall relationship between IM and academic achievement by confirming that IM is a powerful predictor of success in online EFL instruction.

A particularly robust pattern emerged around the relationship between IM and specific language skills, notably writing, reading, speaking, and vocabulary development. For example, Amin (2019) found that learners with higher IM exhibited superior performance in writing tasks, a finding that supports the broader consensus that motivation enhances language production when learners feel autonomous and invested in the task at hand (Amin, 2019). Similarly, De Lozier (2019) observed that intermediate and advanced readers showed improved reading comprehension and increased enjoyment of materials when intrinsically motivated, highlighting the dual affective and cognitive benefits of IM in language acquisition (De Lozier, 2019). This aligns with earlier theoretical assertions by Deci and Ryan (2000), who posited that when learners experience interest and enjoyment in learning, they engage in deeper

cognitive processing and are more likely to persist through challenges (Deci & Ryan, 2000).

Additionally, the review revealed that IM supports learners' ability to develop critical soft skills such as self-regulation, autonomy, and resilience. Bailey et al. (2021) found that learners with high IM were more satisfied with their online courses and achieved better outcomes in grammar and vocabulary, suggesting that IM contributes to deeper learning and not merely surface-level performance (Bailey et al., 2021). Likewise, Tabitha and Pramono (2022) reported that IM played a key role in students' enthusiasm and commitment to learning English in virtual environments, indicating that motivation fosters both persistence and emotional resilience (Tabitha & Pramono, 2022). These findings resonate with the work of Wang (2023), who emphasized that IM contributes to learner autonomy and motivational regulation in online contexts (Wang, 2023).

The second research question explored the internal and external factors influencing IM in online EFL instruction. Internal factors were found to include personal interest, future aspirations, intrinsic value of tasks, and self-efficacy beliefs. For instance, De Lozier (2019) demonstrated that students who found the material enjoyable and relevant to their interests were more motivated and achieved higher reading performance (De Lozier, 2019). Similarly, Bailey et al. (2021) noted that when learners perceived writing tasks as personally meaningful, they exhibited higher levels of engagement and deeper learning outcomes (Bailey et al., 2021). Tabitha and Pramono (2022) also observed that learners' future goals and self-directed ambition served as powerful internal motivators (Tabitha & Pramono, 2022). These findings reinforce the framework proposed by Peechapol et al. (2018), which identifies self-efficacy as a critical determinant of motivation and achievement in online learning environments (Peechapol et al., 2018).

External factors also exerted a substantial influence on learners' IM. Teacher support, peer collaboration, positive learning environments, and effective use of technology were all found to be instrumental. Phuong (2022) reported that students who received consistent support and tailored instructional strategies from their teachers demonstrated higher levels of engagement and intrinsic motivation (Phuong, 2022). Adara and Puspahaty (2021) echoed this, emphasizing the importance of external scaffolding, such as motivational encouragement from teachers and access to meaningful learning experiences, in sustaining learners' IM during online instruction (Adara & Puspahaty, 2021).

García-Sánchez and Luján-García (2016) highlighted the role of collaborative digital platforms such as Moodle in fostering motivation through social interaction and accessibility (García-Sánchez & Luján-García, 2016).

Technological platforms themselves were also shown to be key mediators of IM. Studies involving the use of WhatsApp, YouTube, and Babbel revealed that when these tools were integrated effectively, they enhanced learners' motivation and engagement. For example, Perwitasari et al. (2021) found that learners who used YouTube in conjunction with WhatsApp were more motivated to improve their speaking skills and engage critically with source materials (Perwitasari et al., 2021). Similarly, Imamyartha et al. (2022) reported that the use of WhatsApp in a team-based mobile learning environment significantly boosted learners' engagement and intrinsic motivation (Imamyartha et al., 2022). Oliveira et al. (2021) also documented high satisfaction and strong motivational responses among learners using Babbel's virtual classroom platform (Oliveira et al., 2021). These findings support Alonso et al. (2023), who advocated for the strategic integration of digital tools to support the development of IM in higher education settings (Alonso et al., 2023).

Interestingly, not all studies found a significant relationship between IM and academic performance. For instance, Ali (2022) reported that in their context, there was no significant correlation between IM and learners' English language achievement on digital platforms, nor were there observable differences based on gender or platform type (Ali, 2022). This finding contrasts with the majority of the literature and suggests that contextual and individual learner variables may moderate the strength of the relationship between IM and achievement. It is also possible that methodological factors—such as the measurement instruments used or the nature of the tasks—may have contributed to these discrepancies.

Other studies emphasized the risks associated with a lack of IM. Chowdhury et al. (2021) concluded that insufficient intrinsic motivation significantly hindered learners' proficiency and classroom performance (Chowdhury et al., 2021). Teng et al. (2021) likewise warned that both intrinsic and extrinsic motivational deficits contributed to lower self-confidence and reduced academic participation during remote learning (Teng et al., 2021). These findings underscore the importance of designing online learning environments that not only avoid demotivating features but also actively foster positive motivational states.

This systematic review contributes to the growing body of literature that recognizes IM as a pivotal variable in online EFL education. While the reviewed studies vary in methodology and scope, their convergence around the value of IM as a driver of learner engagement, achievement, and satisfaction strengthens the overall validity of this conclusion. This supports previous meta-analytical work on adult online learning communities and motivational dynamics in digital contexts (Abedini et al., 2021; Nurhidayah et al., 2023). Moreover, the methodological rigor employed in this review—including adherence to PRISMA guidelines and established systematic review protocols—aligns with best practices in evidence synthesis (Aromataris & Pearson, 2014; Tricco et al., 2011).

Despite its contributions, this review is not without limitations. First, the study included only articles published in English, which may have excluded relevant research conducted in other languages and cultural contexts. Second, although multiple databases were searched, the inclusion of grey literature such as unpublished theses or conference proceedings might have provided a more comprehensive overview. Third, variations in study design, sample size, and measurement tools across the included studies may have introduced heterogeneity, potentially limiting the comparability of findings. Lastly, most studies focused on short-term learning outcomes, leaving long-term effects of IM underexplored.

Future research should seek to address these limitations by incorporating multilingual sources and expanding the geographical scope to include underrepresented regions. Longitudinal studies examining how IM evolves over time in response to sustained online learning experiences would offer valuable insights into motivational development. Additionally, more experimental research using standardized measures of IM and learning achievement would help establish causal relationships. Exploring the interaction between IM and other psychological variables—such as anxiety, grit, or emotional intelligence—could also enrich our understanding of learner performance in digital EFL contexts.

Educators and instructional designers should prioritize the development of intrinsically motivating learning environments by incorporating tasks that are meaningful, engaging, and aligned with learners' interests and goals. Training programs for online instructors should emphasize the importance of fostering learner autonomy, providing constructive feedback, and building supportive online communities. Technological tools should be selected and implemented not merely for content delivery, but as instruments that can enhance learners' internal motivation through interactivity, collaboration, and self-expression. By making intrinsic motivation a focal point of online EFL pedagogy, educators can significantly improve both the learner experience and academic outcomes.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all participants for agreeing to record the interview and participate in the research.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

References

Abedini, A., Abedin, B., & Zowghi, D. (2021). Adult learning in online communities of practice: A systematic review. *British Journal of Educational Technology*, *52*(9), 1663-1694. https://doi.org/10.1111/bjet.13120

Adara, R. A., & Puspahaty, N. (2021). How EFL learners maintain motivational factors and positive attitudes during COVID-19 pandemic: A qualitative study. *Academic Journal of English Language and Education*, *5*(2). https://doi.org/10.29240/ef.v5i2.3398

Alcaraz Cárceles, I. M. (2018). Intrinsic motivation in the EFL classroom: preferred taxonomies for classroom activities. *PublicacionesDidacticas*, *94*. https://core.ac.uk/download/pdf/235853173.pdf

Ali, Z. (2022). Investigating the intrinsic motivation among second language learners in using digital learning platforms during the Covid-19 pandemic. *Arab World English Journal (AWEJ)*, *2*(2), 437-452. https://doi.org/10.24093/awej/covid2.29

Alonso, R. K., Vélez, A., & Martínez-Monteagudo, M. C. (2023). Interventions for the Development of Intrinsic Motivation in University Online Education: Systematic Review-Enhancing the 4th Sustainable Development Goal. *Sustainability*, *15*, 9862. https://doi.org/10.3390/su15139862

Amin, E. A. (2019). A correlational study between some motivational constructs and EFL writing performance in a blended learning environment. *International Journal of English Linguistics*, *9*(3). https://doi.org/10.5539/ijel.v9n3p238

Aromataris, E., & Pearson, A. (2014). The systematic review: An overview. *AJN*, *114*(3), 53-58. https://doi.org/10.1097/01.NAJ.0000444496.24228.2c

Bailey, D., Almusharraf, N., & Hatcher, R. (2021). Finding satisfaction: Intrinsic motivation for synchronous and asynchronous communication in the online language learning context. *Education and Information Technologies*, *26*, 2563-2583. https://doi.org/10.1007/s10639-020-10369-z

Chowdhury, T. A., Roy, S., & Kabilan, M. K. (2021). Learner motivation in the EFL classrooms: Voices from a Bangladeshi university. *Indonesian Journal of Applied Linguistics*, *11*(1), 221-232. https://doi.org/10.17509/ijal.v11i1.34618

De Lozier, C. D. M. (2019). Motivation, proficiency and performance in extensive reading. *International Journal of Innovation and Research in Educational Sciences*, *6*(3). http://ijires.org/administrator/components/com_jresearch/files/publications/IJIRES_1559_FINAL.pdf

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227-268. https://doi.org/10.1207/S15327965PLI1104_01

Fang, X. (2020). The impact of online teaching on the English learning motivation of Chinese students during COVID-19. 2020 International Symposium on Education, Culture and Social Sciences,

Faramarzi Babadi, S., Eskandari Asl, H. A., Dolatyari, F., & Alipoor, H. (2024). Limitations of English Language Learning in Universities of Chaharmahal and Bakhtiari Province and Strategies to Overcome Them [Research Article]. *Iranian Journal of Educational Sociology*, *7*(1), 124-132. https://doi.org/10.61838/kman.ijes.7.1.12

García-Sánchez, S., & Luján-García, C. (2016). Ubiquitous knowledge and experiences to foster EFL learning affordances. *Computer Assisted Language Learning*. https://doi.org/10.1080/09588221.2016.1176047

Higgins, J. P., & Green, S. (2011). *Cochrane Handbook for Systematic Reviews of Interventions*. The Cochrane Collaboration. www.cochrane-handbook.org

Imamyartha, D., Wahjuningsih, E., A'Yunin, A., Santihastuti, A., Mitasari, F. D. L. T. A., & Andika, E. C. H. (2022). EFL learners' engagement and learning motivation in team-based mobile language learning through WhatsApp. *Teaching English with Technology*, *22*(1), 82-103. http://www.tewtjournal.org

Kaid Mohammed Ali, J. (2022). The Impact of Online Learning amid COVID-19 Pandemic on Student Intrinsic Motivation and English Language Improvement. *Dirasat: Human and Social Sciences*, *49*(6), 125-134. https://doi.org/10.35516/hum.v49i6.3726

Kokabi Rahman, E., Taghvaei, D., & Pirani, Z. (2023). The Effectiveness of Cognitive and Metacognitive Strategies Teaching on Academic Motivation, Academic Engagement and Quality of Life in School of Students with Specific Learning Disorder in Hamadan City. *Sociology of Education*, *8*(2), 257-266. https://doi.org/10.22034/ijes.2023.707262

Kost, S. (2003). *Motivation and foreign language teaching-strategies for motivation*. Grin. https://www.grin.com/document/45323?lang=en&srsltid=AfmBOoo08kemKO9PxjME21lMNsJNSwxwYMkk-3iubmzoTVNZQ0StXNR8

Li, Y. (2023). The effect of online collaborative writing instruction on enhancing writing performance, writing motivation, and writing self-efficacy of Chinese EFL learners. *Frontiers in psychology*, *14*, 1165221. https://doi.org/10.3389/fpsyg.2023.1165221

Miri Rami, S. F., Delgoshaei, Y., & Mahmoudi, A. H. (2022). Identification and Analysis of Effective Factors on the Strategic Intelligence of Education Districts Managers of Tehran City and Provide an Appropriate Model [Research Article]. *Iranian Journal of Educational Sociology*, *5*(1), 113-125. https://doi.org/10.61186/ijes.5.1.113

Mohtar, M., & Md Yunus, M. (2022). A Systematic Review of Online Learning during COVID 19: Students' Motivation, Task Engagement and Acceptance. *Arab World English Journal (AWEJ)*, *2*(2), 202-215. https://doi.org/10.24093/awej/covid2.13 10.2139/ssrn.4036738 10.31235/osf.io/m6sfe

Nurhidayah, A., Susilawati, E., & Surmiyati. (2023). Students' motivation in completing English assignments in online learning during COVID-19 pandemic. *Journal of English Language and Pedagogy*, *6*(1), 120-129. https://doi.org/10.33503/journey.v6i1.617 10.33503/journey.v6i1.2637

Oliveira, M. M., Sporn, Z., Kliemann, L., Borschke, A., & Meyering, M. (2021). Online language learning and workplace communication: A study on Babbel's virtual-classroom solution. *Computer Assisted Language Learning*. https://www.tandfonline.com/doi/full/10.1080/09588221.2021.2002364

Peechapol, C., Na-Songkhla, J., Sujiva, S., & Luangsodsai, A. (2018). An exploration of factors influencing self-efficacy in online learning: A systematic review. *International Journal of Emerging Technologies in Learning*, *13*(9), 1. https://doi.org/10.3991/ijet.v13i09.8351

Perwitasari, E., Fachriya, E., & Hasanah, A. (2021). Dueting Whatsapp and Youtube for Improving Students' Engagement in Online Learning Mode. Seminar Nasional Riset Linguistik dan Pengajaran Bahasa (SENARILIP V),

Phuong, T. T. H. (2022). Learning motivation of Vietnamese EFL learners in fully online classes during Covid-19: A mixed methods study. *Issues in Educational Research*, *32*(2), 681-698. https://www.researchgate.net/publication/361438842_Learning_motivation_of_Vietnamese_EFL_learners_in_fully_online_classes_during_Covid-19_A_mixed_methods_study

Shan, Y. M. (2020). Whether Successful Language Learners Require Intrinsic Motivation. *Open Journal of Modern Linguistics*, *10*, 549-559. https://doi.org/10.4236/ojml.2020.105031

Tabitha, P., & Pramono, Y. G. H. (2022). Online English learning during the COVID-19 pandemic: Motivating and demotivating factors among EFL students. *Magister Scientiae*, *50*(2). https://doi.org/10.33508/mgs.v50i2.4175

Teng, M. F., Wang, C., & Wu, J. G. (2021). Metacognitive strategies, language learning motivation, self-efficacy belief, and English achievement during remote learning: A structural equation modeling approach. *Relc Journal*. https://doi.org/10.31234/osf.io/epm6s

Tricco, A. C., Antony, J., Zarin, W., Strifler, L., Ghassemi, M., Ivory, J., & Moher, D. (2011). The art and science of knowledge synthesis. *Journal of Clinical Epidemiology*, *64*(1), 11-20. https://doi.org/10.1016/j.jclinepi.2009.11.007

Wang, Y. (2023). EFL Higher Vocational Students' Motivational Regulation and Learner Autonomy in Online Learning Context in China. *Frontiers in Humanities and Social Sciences*, *3*(6). https://doi.org/10.54691/fhss.v3i6.5150

Yanzhi, M. (2022). Literature Review of Learning Demotivation among Foreign Language Learners. *International Journal of English Literature and Social Sciences*, *7*(1). https://doi.org/10.22161/ijels.71.23