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FLOW IN EFL AND ESL CONTEXTS: A SCOPING REVIEW OF EMPIRICAL RESEARCH

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Abstract:

Over the past two decades, research on flow in English as a Foreign Language (EFL) and English as a Second Language (ESL) settings have grown steadily, driven by a broader surge of research interest in learners' positive emotional and motivation. However, this body of work remains scattered. Studies differ notably in their theoretical learnings, methodological choices, and what they choose to examine. To provide a clearer picture of how flow has been conceptualized and investigated in language education, this scoping review synthesizes empirical studies published between 2000 and 2026. Following the PRISMA-ScR framework, a systematic search of Web of Science, Scopus, and ScienceDirect identified 47 studies for inclusion. The analysis examined major research foci, participant characteristics, theoretical foundations, methodological approaches, key findings, and reported limitations. The review shows that flow research has been conducted predominantly with university-level EFL learners, while younger learners and diverse educational settings remain underrepresented. Existing studies have focused largely on factors that trigger flow, particularly task features and technology-mediated learning environments, whereas its longer-term educational consequences and its relationships with other academic emotions, such as boredom and anxiety, have received comparatively limited attention. The findings also indicate the continuing influence of positive psychology frameworks, alongside increasing attempts to integrate perspectives from related disciplines. Methodologically, the literature is still dominated by cross-sectional survey research, although recent studies have begun to adopt longitudinal, experience-sampling, and physiological approaches. Emerging evidence further suggests that flow in today's technology-enhanced environments is highly context-

sensitive and shaped by the interaction of pedagogical, technological, and learner-related factors. Taken together, the findings highlight both the progress made in understanding flow in language learning and several important directions for future research and pedagogical practice.

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EFL, ESL, Flow, Research Methodologies, Scoping Review



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Introduction

With the developing trend of positive psychology, more studies are dedicated to the optimal affective state in human functioning (Csikszentmihalyi & Seligman, 2000). This positive shift, in the field of second language acquisition (SLA), has expanded research from solely focusing on negative emotions like anxiety and boredom to incorporate positive affective reactions that can aid language learning (Dewaele et al., 2019; MacIntyre & Gregersen, 2012). Flow is a key construct in the context of these conditions and of learners' optimal experiences in language acquisition.

Csikszentmihalyi (1975) originally described flow as “an internal state in which the person is completely engaged in the activity, nothing else matters, and they participate in the activity for its own sake” (Csikszentmihalyi, 1990, p. 4). It features a profound level of focus, self-motivation, self-control, and distortion of time perception (Engeser et al., 2021; Nakamura & Csikszentmihalyi, 2014). Flow is defined as a heightened state of cognitive and behavioral involvement (Philp & Duchesne, 2016). A common way of organizing the phenomenon into flow studies is by antecedents (e.g., clear goals, challenge-skill balance, and immediate feedback), experiential features (e.g., absorption, challenge and action awareness merge, and autonomy), and outcomes (e.g., reduced self-consciousness, time distortion, and autotelic experience) (Nakamura & Csikszentmihalyi, 2009). In general, flow is a psychological state of intrinsically rewarding experiences, which involve cognitive, motivational, and affective processes.

Flow is rewarding in itself, which encourages learners to engage in the activity again and again and to stay involved for longer, leading to greater learning and performance (Csikszentmihalyi 1990). Educational psychology has studied flow in various fields like music, sports, playing, and web-based learning (Oliveira dos Santos et al., 2018), and the results from all these fields have been consistent: flow is beneficial to engagement, persistence, and performance.

However, the research on flow in SLA is quite scattered, relative to the general literature on education and psychology. Such underinvestment is significant, given that the field of language education today is more concerned with the welfare, positive development, and interpersonal relationships of learners than just their linguistic competence (Mercer et al., 2018). Positive emotional concepts like foreign language enjoyment (Li, 2020), happiness, well-being, and affective engagement (Dewaele, 2011) have become an increasing focus of existing SLA research. However, flow, considered one of the most immersive types of positive engagement, has not been researched systematically and consistently in SLA.

Although there has been an increasing interest in positive emotions in SLA, the research on flow is still spread out in educational contexts, populations of learners, and modalities of instruction. Past studies have used different theories and methodologies, which make it challenging to build up a unified concept of what flow is, how it has been studied, and how it has been interpreted in L2 research. Furthermore, although there has been some increase in empirical research in recent years, no systematic synthesis of empirical research on flow in EFL/ESL learning contexts has been made to date. The developments signify that a comprehensive review of flow research in EFL and ESL contexts is necessary.

To address this need, the present study proposes a scoping review of empirical studies on flow in EFL and ESL contexts that took place within the span of 2000 and 2026. The review will describe the evolution of the field and reveal the most prominent research trends, findings, and theoretical and methodological patterns as well as the most common limitations and future research needs, following the PRISMA-ScR guidelines (Tricco et al., 2018). The review focuses on the following questions in particular :

RQ1: What are the main trends and features of EFL and ESL empirical research related to flow?

RQ2: What theoretical perspectives and methodological approaches have been applied in the study of flow in EFL and ESL research?

RQ3: What key findings and limitations can be identified, and what directions for future research can be proposed?

Methodology

As flow research in the EFL and ESL fields is growing and multifaceted, a scoping review was deemed to be the most suitable way of mapping the existing literature and identifying major research trends, methodological patterns, key findings, and research gaps. Scoping reviews are particularly useful for examining flow here, as it is a fragmented research area. This review covers the total evidence. The present review was conducted based on the five-stage framework proposed by Arksey and O'Malley (2005) and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018).

Identification

This paper's literature search of the flow experiences of foreign language learners is retrieved from three databases, namely Web of Science (WoS), Scopus, and ScienceDirect. The databases were chosen to provide maximum coverage of disciplines of applied linguistics, educational psychology, and language education research. Search strings were constructed using an

iterative process that involved Boolean operators (AND, OR) with terms related to flow, English language learning, and educational contexts. The final search string was created using an iterative process (see Table 1). The string of concepts and their synonyms were created by using related literature in this field (Dille & Røkenes, 2021).

Table 1: Optimized Search Key Words

| Concept | Flow and associated terms | English and associated terms | Learning and associated terms |
|-----------|---|---|---|
| OR AND | Search term used: “flow experiences” theory” “Optimal experience” “Flow*” | Search term used: “EFL (“English as a Foreign Language”) “ESL” (“English as a Second Language”) “L2” (“Second Language”) “SLA” (“Second Language Acquisition”) “FL” (“Foreign Language”) | Search term used: “Teaching” “Learning” “Class” “Classroom” |

Screening

The retrieved record titles and abstracts were systematically scanned using eligibility criteria. Studies were accepted if they were conducted in English and involved specifically flow experiences in EFL or ESL contexts. A total of 3,339 records were excluded after initial screening, and 413 studies underwent eligibility assessment of the full text. The complete screening and selection process is displayed in figure 1.

Table 2: The Inclusion and Exclusion Criteria for the Review

| Classification | Inclusion Criteria | Exclusion Criteria |
|---------------------------|---|---|
| Publication time | From January 2000-February 2026 | Before 2000 |
| Language | English | Non-English |
| Availability | Full text access | Not available |
| Publication Type | Peer-reviewed journal articles | Book chapter, book, review, thesis/dissertation |
| Connection to Flow theory | flow experiences as a main construct in the study | Flow mentioned only briefly or not central |
| Participants | EFL (ESL) learners | EFL (ESL) teachers or other non-language learners |
| Research Type | Empirical study (qualitative, quantitative, or mixed) | Non-empirical studies (e.g., introductory, conceptual, pilot studies) |

Eligibility

The complete texts of the 413 records that were retained were retrieved and systematically examined during the eligibility phase. 284 studies were disqualified based upon full-text evaluation for non-empirical publications, pilot studies, book chapters, book reviews, and

studies that did not have flow as the primary construct. In this stage, 129 studies were found that might be relevant and warranted further analysis.

Inclusion

The 129 records remaining following full-text screening went through a final eligibility process to ensure they met the review objectives. The studies included had to (a) primarily study flow in EFL or ESL contexts, (b) study the learners themselves and not the instructors or other stakeholders, and (c) present empirical evidence on the antecedents, characteristics, or results of flow. Studies were excluded when flow was not discussed or was incorporated within a larger construct without being analyzed separately or when there was insufficient data to provide answers to the review questions. After this last evaluation, 47 studies met all the eligibility criteria and were retained for systematic analysis.

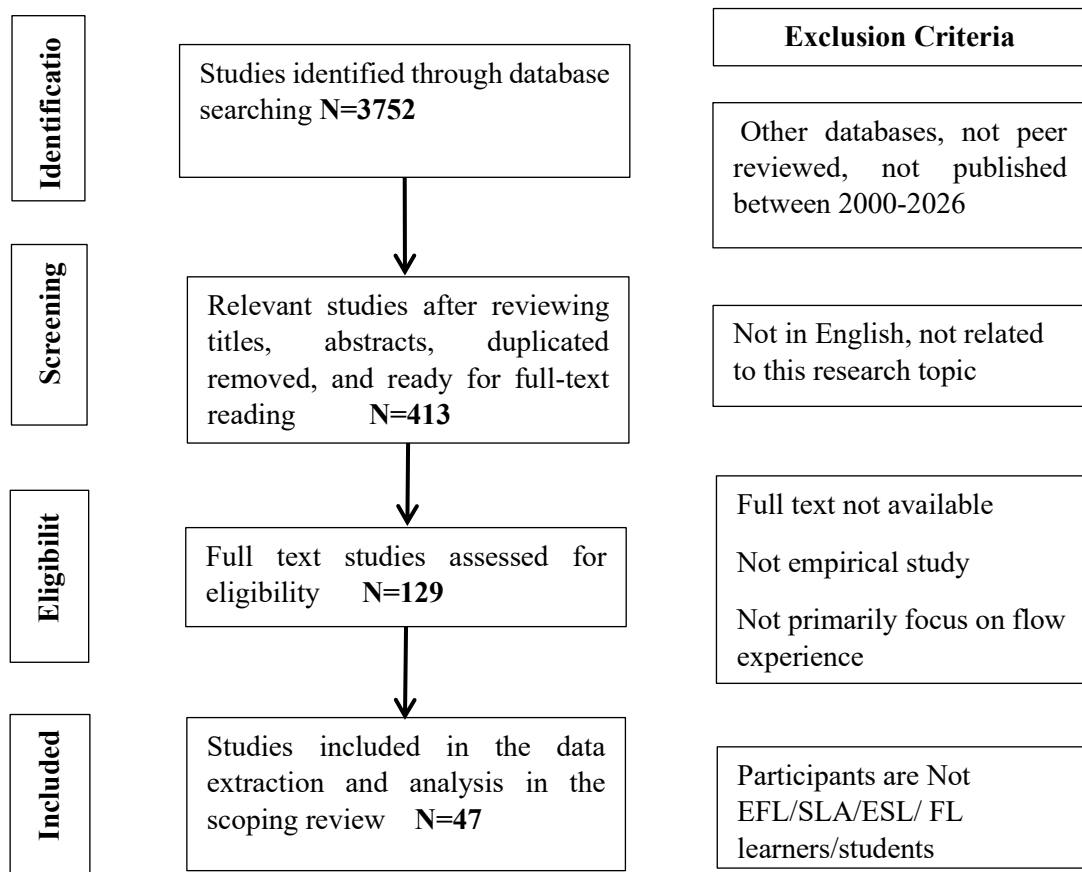


Figure 1: The Process of Scoping Literature

Data Analysis and Discussion

The results are presented under these six dimensions. First, Figure 2 shows the number of articles published on foreign language learners' flow experience from 2000 to 2026. The first article cited in this review was Egbert (2003), which, according to scholars, was a pioneering study (Aubrey, 2017a, 2017b; Dewaele & MacIntyre, 2024). This study was a pioneering initial effort towards the use of flow theory in the field of foreign language education research.

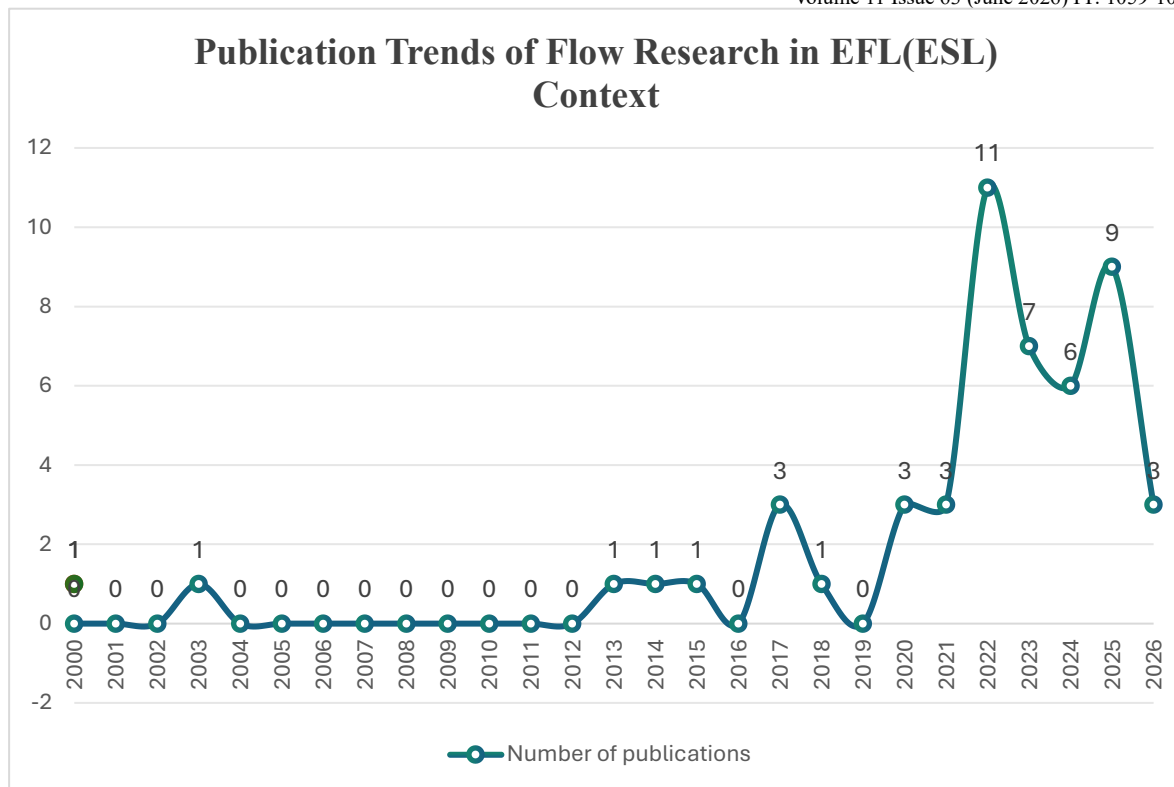


Figure 2: Publication Trends in EFL (ESL) Flow Experiences Research (2000-2026)
Note: Data for 2026 represents publications identified up to March 2026 and therefore does not reflect the complete publication year.

Overall, research on flow experiences in EFL (ESL) learning has been developing steadily over the last two decades, although the process has been uneven. The early literature was sparse, indicating that flow theory was originally a minor component of the research on foreign language education. The first empirical study on flow theory in foreign language learning is considered to be Egbert's (2003) study in *The Modern Language Journal*. After conducting an experimental study with Spanish learners, Egbert identified some common characteristics of flow and proposed that language task design played an important role in the facilitation of flow in the classroom. This study related positive psychology to the learning of foreign languages, but research on flow in EFL and ESL classrooms has been somewhat scattered following this study. The next ten years yielded only scattered research, suggesting that flow was not yet a consistent concern in language education (see Figure 2).

It is significant to note that research activity has been growing steadily since 2014, though with a relatively small number of publications. During this time scholars started to explore the prerequisites and supportive factors for flow, such as autotelic personality, motivational characteristics, and technology-supported learning environments (Lee et al., 2014; Telązka, 2015). The development of flow research in EFL (ESL) learning, however, was still slow compared to other fields of study, such as psychology, tourism, and management, where flow theory had already been widely recognized. This indicated that the pedagogical implications of the flow theory for EFL (ESL) learning were not systematically explored.

After 2021, a more significant growth emerged. With the emergence of positive psychology in SLA studies, more focus was placed on the feelings and positive experiences and well-being of L2 learners in L2 learning settings. As a result, publications of flow in EFL (ESL) contexts saw a significant rise. According to the data that has been reviewed, the number of studies increased from 3 in 2021 to 11 in 2022, 7 in 2023, and 6 in 2024. There is a continued interest in research output during 2025 and 2026. This recent increase also seems to be linked to the increased focus on online and technology-based language learning during and after COVID-19, which sparked interest in the use of immersive and affective learning in digitally mediated environments (Dewaele et al., 2022; Han et al., 2020; Hong et al., 2023; Zong & Zhang, 2020). Reviewed studies showed that most research was based on positive psychology, specifically Csikszentmihalyi's flow theory and broaden-and-build theory. These views influenced the way in which flow has been interpreted, and instruments and data collection methods have been developed. In addition, some studies utilized self-determination theory (Bakker & Van Woerkom, 2017), engagement theory (Mandhana & Caruso, 2023), expectation confirmation theory (Ma, 2025), and cognitive theories about motivation and self-efficacy (Hong et al., 2017; Jia et al., 2026). However, there were some limitations in the theoretical integration in some studies that were conducted using multiple perspectives since the relationship between theories was not fully discussed (Far & Taghizadeh, 2022; L. Wang et al., 2022). The latest research demonstrates more diversification in theory, such as control-value theory (Jia et al., 2026), the person–artefact–task model (Meng & Li, 2026), and achievement emotion theory (Hong et al., 2025). They are indicative of the theoretical growth and maturity of the field of flow research in EFL (ESL).

Research Focuses

The studies reviewed covered a wide spectrum of issues in the field of flow related to EFL (ESL) learning. In order to clarify the existing research directions, studies were categorized based on the three aspects of flow theory: the antecedents, characteristics, and outcomes of flow experiences (Abuhamdeh, 2020; Barthelmäs & Keller, 2021; Nakamura & Csikszentmihalyi, 2020; Xie et al., 2026). During the coding process, studies focusing primarily on the development or validation of flow measurement instruments were categorized separately. As shown in Table 3, four broad research themes emerged from the reviewed literature: antecedents of flow experiences, characteristics of flow experiences, outcomes of flow experiences, and flow measurement development (see Table 3).

Table 3: Research Focuses and Represented Articles

| Research Topics | Research Questions/Objectives | Represented Articles |
|-----------------|--|---|
| Antecedents | Different tasks/activities | Arai, 2022; Aubrey, 2017a, 2017b; Cho, 2018; Egbert, 2003; Ghanbaran et al., 2023; Wang et al., 2020; M. Zuniga, 2023 Dewaele et al., 2022; Dewaele et al., 2023; Far & Taghizadeh, 2022; Hong et al., 2023; Hsu, 2017; Li et al., 2021; Liu & Song, 2021; Liu & Hwang, 2024; Lu et al., 2022; X. B. Wang et al., 2022; Zong & Zhang, 2020; Zou et al., 2021 |
| | Different EFL learning context combined with techniques/online class | |
| | Individual factors (language proficiency, personal | Jahedizadeh et al., 2021; Jia et al., 2024 |

| Research Topics | Research Questions/Objectives | Represented Articles |
|-------------------------|---|--|
| | characters, passion and self-efficacy, self-compassion) | |
| | Interactions with other factors (motivation, engagement, Willingness to Communicate, academic emotions) | Dewaele & MacIntyre, 2022; Lu et al., 2022; Lu, 2024; Marszalek et al., 2022; Payant & Zuniga, 2022; X. B. Wang et al., 2022; Zhang et al., 2022; Zou et al., 2021 |
| Characteristics | Levels/strength | Egbert, 2003; Hsu, 2017 |
| | Dynamic changes | Aubrey, 2017a |
| | Academic performance/outcome | Cho, 2023; Dai et al., 2023; Jahedizadeh et al., 2021 |
| Outcomes | Academic emotions | Dewaele & MacIntyre, 2024; Dewaele & MacIntyre, 2022 |
| | Psychological well-being | Zhang, 2026 |
| | Self-efficacy | Gong & Xu, 2024 |
| Measurement Development | Flow Scale development | X. B. Wang et al., 2022; M. Zuniga, 2023 |

Among these themes, studies on the antecedents of flow experiences were the most common. A significant percentage of the studies examined are on technology-enhanced language learning environments, such as the use of AI in language learning, online learning environments, digital game-based language learning, and multimedia-supported instructional activities. Overall, these studies indicate that there is a potential for technological affordances to foster optimal learning, immersion, and engagement. For instance, Wu and Wang (2025) found that the link between Gen AI-assisted informal digital learning and flow experiences was mediated by autonomy and relatedness; however, competence did not significantly predict flow experiences. Xiao (2025) also discovered that AI-based speech recognition activities were effective in improving learners' flow experiences during the intervention period, but this improvement was not sustained over time. This indicates that technology-mediated flow experiences might be fleeting and non-permanent. Based on the research findings of video-dubbing tasks, it was found that the learners who participated in the multimodal speaking activities enjoyed a higher level of flow and showed greater improvement in their speaking performances than the learners who were taught under the conventional method (Xiao, 2025). Another major trend of research focused on the connection between flow and other psychological phenomena, such as motivation, engagement, willingness to communicate, and academic emotions. The close association between positive emotional experiences and flow was pointed out by several studies. For example, Lu (2025) discovered that there was a strong positive relationship between foreign language enjoyment and foreign language flow experiences, while foreign language anxiety had a weak negative relationship with foreign language flow experiences. Intriguingly, Hong et al. (2025) found that gameplay anxiety negatively predicted flow under specific instructional circumstances, indicating that the link between anxiety and optimal experience might be more intricate than commonly believed. More recently, Jia et al. (2026) showed that flow was a mediator between self-efficacy and foreign language classroom anxiety, and self-compassion was a moderator of the effects of self-efficacy on flow experiences.

Compared to the abundance of studies on the antecedents, there is relatively limited research that has studied flow experiences and their characteristics and consequences directly. Previous research in this field focused primarily on the intensity and dynamic changes in flow, its link with academic outcomes, psychological functioning, emotions, and self-efficacy. A number of findings suggest that flow experiences can have a beneficial impact on the motivation and well-being of the learner, but the connection between flow and achievement is not so clear. For instance, Cho (2023) reported that the intrinsic enjoyment explained perceived learning success, but no specific dimensions of flow were significant predictors of learning outcomes. Likewise, in their study, Zhang et al. (2025) found that more in-depth flow led to an increase in learners' awareness of the structure of an argumentative text and a subsequent decrease in writing self-efficacy, which may be explained by learners' increased awareness of their own language ability gaps.

Recent studies also started using a more varied analytical approach methodologically. Meng and Li (2026), for example, combined structural equation modeling with fuzzy-set qualitative comparative analysis (fsQCA) to identify multiple configurational pathways leading to high levels of flow experiences in digital game-based vocabulary learning. Their findings showed that there were multiple combinations of interactivity, goal orientation, and learning support that were connected to flow in addition to questioning the previously held notion about the necessity of feedback and interactivity. Moreover, Wang and Feng (2025) used multi-group analysis to confirm that the experience of flow is different for learners with different levels of familiarity with digital learning tools.

Although the research into flow measurement is still relatively small, recent research has focused considerably on methodological improvements and ecological validity. For example, Michael Zuniga (2023) used an adapted Experience Sampling Method (ESM) to examine changes in learners' flow experiences throughout various classroom activities. The study demonstrated the dynamic interaction between the task features and the emotional experiences of learners in relation to the tasks and offered practical implications for task design in language classrooms.

Research Approach and Methodology

In terms of research methodology, quantitative methods were most commonly used in the articles reviewed (21, 44.7%), followed by mixed methods (18, 38.3%) and qualitative methods (8, 17.0%) (see Figure 3). In particular, the cross-sectional designs were common throughout the studies reviewed, and few studies employed experimental or longitudinal designs. In the experimental studies, most of them used quasi-experimental and randomized controlled designs to investigate the impact of particular interventions in education on learners' flow experiences. Three of the studies were longitudinal studies, with the length of the studies varying from eight weeks to eight months. The findings indicate that studies on flow experiences in EFL (ESL) learning have been conducted mostly in the short term and cross-sectional studies, and longitudinal developmental studies are still relatively under-researched.

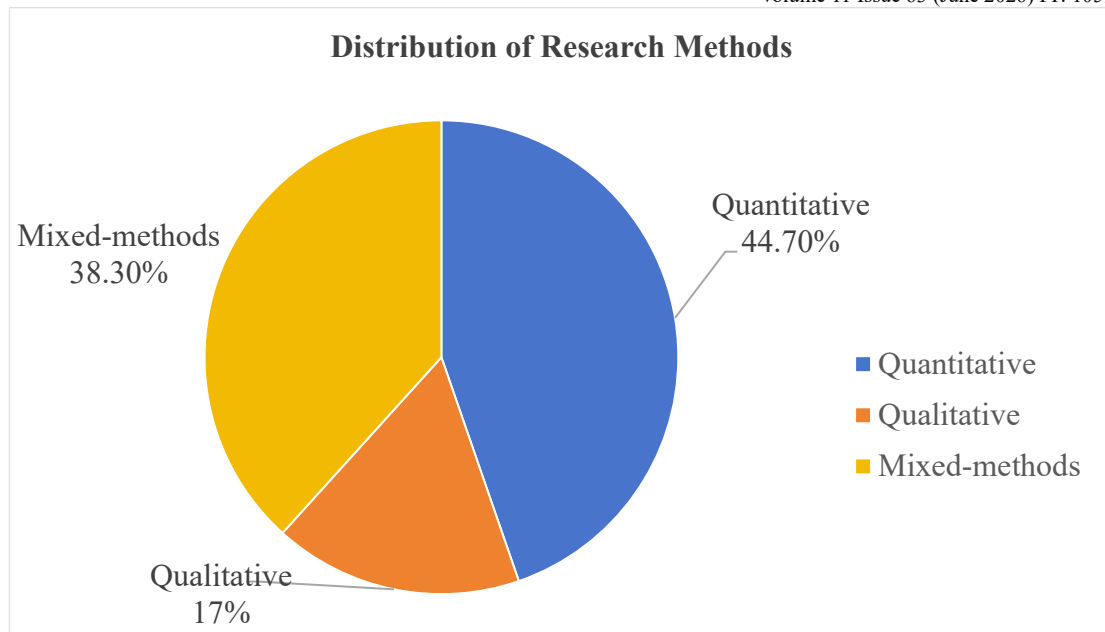


Figure 3: The Distribution of Research Methods

In terms of geography, the studies reviewed were largely within an Asian context. The highest percentage of studies came from China (18 studies from the mainland, 38.3%, and 4 from Taiwan, 8.5%) and Iran (6, 12.8%) and Japan (5, 10.6%). The studies performed in the USA were three in number, and a smaller number of studies were from France, Canada, Turkey, Saudi Arabia, and South Korea. There were also several cross-national comparative studies. The distribution of studies shows that most studies on flow experiences in L2 (ESL/EFL) learning have been conducted in East Asian contexts, as shown in Figure 4, and more and more studies focus on issues related to learner psychology and technology-assisted language learning.

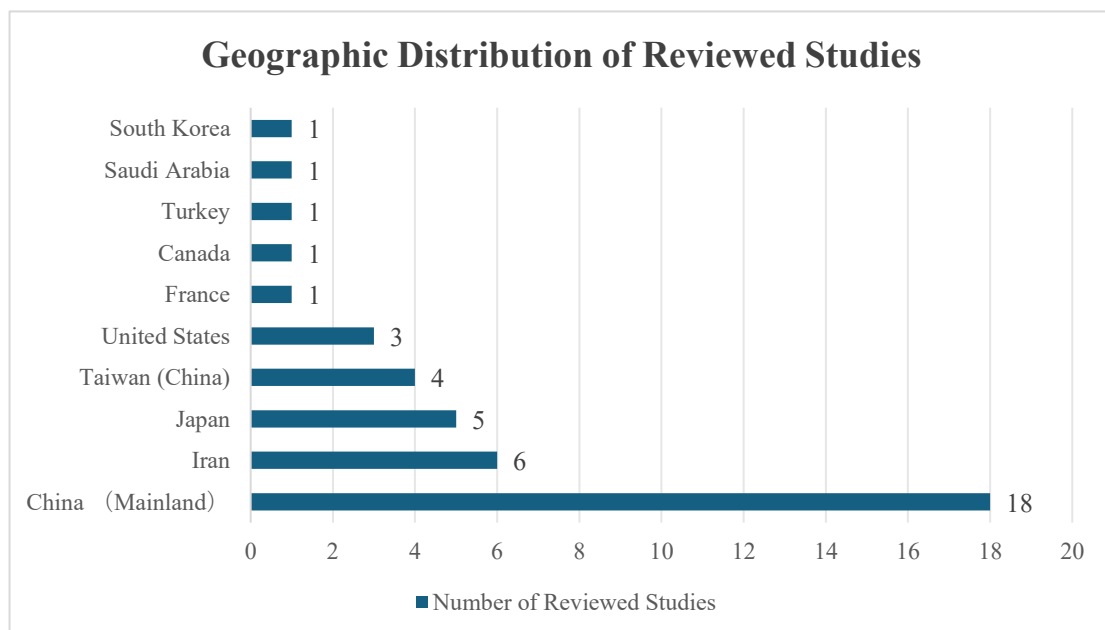


Figure 4: Geographic Distribution of Reviewed Studies

(**Note:** This figure only includes articles that claim participant nationality and research context clearly in the content)

Most studies focused on university and college students, who constituted the dominant participant group across the reviewed literature (38 studies). Comparatively fewer studies examined younger learners, including four studies involving junior high school students and one study involving elementary school learners (Hong et al., 2025). Only a few studies included both high and low education levels or made no clear distinction about the level of education of the subjects. Further, there was not much information on learners' disciplinary backgrounds in most studies, and academic majors were limited, indicating that there has been some lack of contextualizing of subjects in existing studies.

In terms of data collection instruments, the questionnaire was the most commonly used data collection instrument in quantitative research. The most widely used measures were Egbert's (2003) adapted Flow Perception Scale and the Flow State Scale (FSS/FSS-2) (Jackson & Marsh, 1996). Data analysis involved the use of conventional statistical techniques, which included mean, correlation analysis, t-test, ANOVA, path analysis, regression analysis, and structural equation modeling (SEM) in most quantitative studies. More recent studies have shown that there is more and more methodological diversification in the research, such as the linear mixed model (Xiao, 2025), fuzzy-set qualitative comparative analysis (fsQCA) (Meng & Li, 2026), multi-group analysis (Wang & Feng, 2025), and partial least squares SEM (PLS-SEM) (Wu & Wang, 2025). The main methods of analysis used for qualitative analyses were thematic and content analysis. In summary, these developments indicate that research on flow experiences in EFL (ESL) is slowly turning to more methodologically diverse and analytically sophisticated studies.

Research Findings

Theoretical Perspectives

The studies examined were based mostly on Csikszentmihalyi's flow theory (1975, 1990, and 2000), which remains the most fundamental theory underpinning the research on flow in EFL (ESL). The majority of research has focused on flow as an ideal psychological condition, where students are intensely engaged, enjoying, and focused on learning activities. Apart from the basic structure of flow theory, more and more theoretical ideas of related fields, especially those from educational psychology and motivation research, were integrated into flow theory. Popular theories included control-value theory (Jia et al., 2026; Pekrun, 2006), self-determination theory (Deci & Ryan, 2012; Wu & Wang, 2025), and theories in the realm of motivation and self-efficacy (Zhang, 2026) and engagement (Aubrey, 2017a) as well as communication theory (Almukhaild & King, 2024). In more recent studies, there has been an extension of the theoretical scope by incorporating the person-artefact-task model (Meng & Li, 2026), achievement emotion theory (Hong et al., 2025) or broaden-and-build theory (Jia et al., 2026). As a whole, they are indicative of an increasing interdisciplinary and theoretical diversification of research on flow experiences in language learning.

Even with this growth, the literature reviewed retained many dimensions found in flow, and specifically, challenge-skill balance. In most studies, the flow experiences focused on how well tasks aligned with students' language proficiency and cognitive abilities (Egbert, 2003; Zuniga, 2023). This focus is part of a general belief that flow happens when learning tasks are just

challenging enough, but not too difficult, for the learner. This led to a number of studies centered on task complexity, the technology-enhanced learning environment, and how instructional design can be used to promote this balance and thus increase the likelihood of flow experiences.

The review also revealed the theoretical limitation in literature. A number of studies focused on only parts of flow instead of considering the whole multidimensional structure of flow (Aubrey, 2017a, 2017b; Cho, 2018; Zuniga, 2023), and there was a lack of clear distinction between antecedents, flow experiences, and outcomes. Furthermore, while several theoretical perspectives were often used, they did not always assist in a systematic interpretation of the findings and were often more like a reference. These issues indicate that future research needs to be better theoretically integrated and to have a closer link between theory, research design, and interpretation.

Major Empirical Findings Across Literature

Overall, flow experiences in EFL (ESL) learning were broadly described as a psychological state that emerges as a result of the interplay between instructional conditions, technological affordances, and the learner in the reviewed literature. However, the literature has yet to come up with a theoretically stabilized understanding of flow in EFL/ESL contexts. Although a large number of studies viewed flow as a state of optimal experience in which engagement, enjoyment, and effective learning are present, some studies more narrowly defined flow as cognitive immersion, concentration, or being absorbed in a task. In a few instances, the concept of flow was conceptually similar to other related constructs like engagement, enjoyment, intrinsic motivation, and psychological immersion, and it was not clear whether it could be distinguished as a separate construct. Accordingly, the status of flow in L2 learning is gaining increasing significance, and the definition of flow is still quite flexible.

Many studies have been devoted to the identification of the antecedents of flow, especially in the context of classroom task design and technology-supported learning environments. Flow was always found to be facilitated by meaningful and appropriate activities that were challenging. Generally, tasks that involve authentic communication, collaboration, peer evaluation, clear task goals, and immediate feedback were found to enhance learners' concentration, participation, and perceived control (Aubrey, 2017a, 2017b; Cho, 2018; Egbert, 2003; Zuniga, 2023). Technological affordances like interactivity, adaptive challenge, playability, and immediate feedback have also been considered in the last few years (Li et al., 2021; Zou et al., 2021). However, results were not always consistent. Some of the studies highlighted the positive aspect of technological interaction and feedback, while others indicated less pronounced and stable relationships, indicating that technological aspects alone are not enough to explain flow.

Meanwhile, an increasing number of studies highlighted the role of language learners' factors such as language proficiency, self-efficacy, motivation, and autotelic personality (Lee, Jheng, & Hsiao, 2014; Jahedizadeh et al., 2021). Together, these studies indicate that flow experiences depend on the fit between learning conditions in the outside world and the psychological predispositions of the learners. However, the relative weight of situational and dispositional factors is not clear. Some studies regarded flow as a situationally bound state that was caused by instructional conditions, while other studies were more associated with stable learner characteristics. This divergence demonstrates a continuing tension between the environment

and the person as explanations for flow and has not been fully resolved by the current models of flow as to how the two factors interact during the process of EFL (ESL) learning.

The studies reviewed also identified significant inconsistencies in nature and measurement of flow. While flow was often described in terms of concentration (Egbert, 2003), intrinsic enjoyment (Engeser, 2012), involvement, a sense of control, and altered perceptions of time, there was significant variation in the way these dimensions were operationalized and prioritized in the studies. Challenge–skill balance was a major factor in many investigations, which tended to give little consideration to other aspects of flow theory. Furthermore, the separation of antecedent conditions, experiential characteristics, and learning outcomes was not always clearly made analytically. In several studies, facilitating factors, subjective experience of flow, and consequences of flow were not considered as conceptually different theoretical constructs. This lack of conceptual differentiation could be one of the reasons why the results from literature have been dispersed and sometimes contradictory.

Existing findings were also hard to interpret due to methodological divergence. The literature reviewed was very dependent on cross-sectional survey design and retrospective self-report measures, often using a single measure of flow. Thus, although the theories suggested that flow is a constantly changing and dynamic state, it was often treated as a more enduring, psychological phenomenon. Longitudinal studies and real-time studies, such as multi-time point studies and experience sampling methods (ESM), have been increasingly used in the last few years, but they are still relatively rare. Furthermore, the use of self-report instruments might have influenced literature to present flow in a very positive light. Due to the nature of such tools, which tend to focus on the conscious perception of emotional states, they do not necessarily reflect frustration, cognitive overload, emotional fluctuations, or disengagement during the task. Consequently, existing knowledge about flow experiences in EFL (ESL) learning might be determined by the nature of flow experience as well as by methodological assumptions within which they have been explored.

Fewer studies have focused on the results of flow as such, as opposed to antecedents and experiential qualities. Generally, the studies are related to positive emotions associated with flow, including enjoyment, engagement, and less anxiety (Dewaele & MacIntyre 2022, 2024; Jia et al. 2026). But the relationship between flow and achievement or sustained language development is mixed. Some studies have shown positive results with respect to performance and skill development (Cho, 2023; Zhang, 2026), while others have produced weak, inconsistent, and even paradoxical findings, such as a correlation between deeper flow and decreased self-efficacy. In summary, flow is a significant construct in EFL (ESL) research that is not yet well-established in both theoretical and empirical terms.

Recent Research Trends (2025–2026)

The last two years have seen a definite change in flow research in the field of educational technology. The literature of the 2025-2026 period has shifted from confirming Csikszentmihalyi's classical conditions of clear goals, immediate feedback, and skill challenge balance to a more situated and temporally sensitive view on the emergence of flow in digitally mediated EFL (ESL) learning. This is an era characterized by three intertwined movements: a new path of consciousness about the ephemerality of technology-induced flow, a new approach to task design assumptions, and the use of configurational pathways instead of linear causal models.

The one thing that has been found to a quite striking pattern in the recent studies is that even flow, which was once believed to be more or less a stable state and a uniformly positive state, has been found to be surprisingly ephemeral in an artificial intelligence (AI)-mediated environment. Both Wu and Wang (2025) and Xiao (2025) identified positive effects between generative AI literacy and English proficiency on flow through autonomy and relatedness, respectively, but Xiao (2025) indicated that the effect of AI-driven speech recognition on flow was only immediate after an eight-week intervention, not sustained at follow-up. Even more provocatively, Zhang et al. (2025) found that deeper flow during a ChatGPT-based argumentative writing task was positively associated with improved understanding of the logic of the writing but paradoxically negatively with writing self-efficacy. These results combined indicate that flow in the context of AI can have an ambiguous normative significance, which could pave the way for an investigation of learners' retrospective experiences of flow.

The association between negative emotions and flow has also become more complicated—not solved. Lu (2025) revealed that foreign language enjoyment was a strong predictor of flow, while foreign language anxiety negatively but not significantly predicted flow. However, Hong et al. (2025) found that the more task-specific construct ‘gameplay anxiety’ was a negative predictor of flow. Jia et al. (2026) also found that flow mediated the self-efficacy and foreign language classroom anxiety relationship and that self-compassion moderated the self-efficacy-flow relationship. These conflicting results are not really incongruous but rather a significant difference. General anxiety in the domain may differ from task-embedded anxiety, and the emotional valence of flow might be different if the source of discomfort is diffuse or if it is directly related to the task at hand.

Perhaps the most conceptually disturbing finding is related to task design. According to Zhang (2026), the results revealed that the learners' flow and motivational and psychological well-being were significantly higher in the ambiguous task condition than in the highly structured task condition. This questions the view of flow as always depending on having explicit goals. Likewise, speaking and learning during videoproduction tasks (video dubbing) were found to be more effective than passive viewing by Hwang et al. (2025). All of these findings indicate that task antecedents for flow may require revisiting. Ambiguity and production-oriented design might be potential unexplored avenues for flow, at least in EFL (ESL) learning.

Methodologically, the 2025-2026 literature represents the first appearance of the configurational approach to the classical linear model. Meng and Li (2026) applied both SEM and fsQCA and found that there are three paths to high flow: barrier-free-oriented, goal-oriented, and interactivity-oriented. Interestingly, they found that interactivity and feedback were not significant predictors of flow, in contrast to previous studies like Li et al. (2025) in which interactivity proved to be the most direct predictor of continuance intention. These incompatibilities are not to be interpreted as shortcomings of the literature, but rather as a diagnostic opportunity. They might be due to the different understandings of what is meant by “interactivity” and how it is operationalized, both in terms of system responsiveness and social interactivity, as well as on the level of achieving flow in the moment or a behavioral intention to continue. Wang and Feng (2025) add additional complexity by demonstrating that in their flow model three paths were moderated by usage frequency, indicating that the flow for learners with varying levels of familiarity with digital tools could be experienced in different ways.

The cumulative evidence from the year 2025 to 2026 indicates that flow cannot be considered a fixed psychological state that always has the same antecedents. Instead, it seems to be an emergent and contextually transient arrangement that is dependent upon task design and emotion granularity, measurement interval, and learner history. This transition opens a change in questioning from a human-oriented review. Future research could start to ask not only what predicts flow but also how learners enact flow in different digital ecologies as meaningful, ephemeral, or even unwanted.

Current Challenges and Limitations of Flow Research in EFL (ESL)

Even though there has been significant research into flow in EFL (ESL) contexts over the last 20 years, there are a number of problems that constrain the building up of a cumulative and coherent body of knowledge. The literature reviewed has yielded significant findings relating to factors of flow and experiences of language learners. A closer look, however, shows that there are a lot of questions that haven't been answered and that remain at the heart of the field. A common problem is over what flow actually means. Despite the increasing presence of the construct in language learning research, its definition varies as well as the identification of the experience in the construct. Flow is seen as a state of mind that occurs in a particular learning task in a few studies. Others talk about it more broadly as an ongoing disposition to intense involvement. This variety is indicative of the complexity of the construct, but it also makes it difficult to compare results from different studies. As the literature grows, more exactness of concepts will be required. The absence of a clear definition of "flow" in language learning makes it hard to conclude if any discrepancies are due to differences in learners' experiences or in definition.

The same is true on the theoretical level. A variety of studies were reviewed, from the standpoint of flow theory, positive psychology, self-determination theory, control-value theory, and complex dynamic systems theory. This extension has made the field more fruitful and provided avenues for further research. Meanwhile, it has created a body of literature where various aspects of flow are discussed separately in terms of different explanations. While cognitive, emotional, motivational, and contextual influences have been much talked about, there is less research linking these dimensions to a wider context of language learning. Therefore, theoretical development has been more of a proliferation than an integration.

A similar imbalance is seen in the methodological profile of the literature. Many of the data are derived from cross-sectional studies with self-report questionnaires. These studies have contributed to confirming the presence of flow in EFL (ESL) contexts and factors associated with it. They do not, however, give a complete picture of a phenomenon widely referred to as dynamic and context dependent. There are only a few studies that consider the emergence, variation, and development of flows over time. Longitudinal, repeated-measure, and experience-sampling designs are still relatively uncommon. Furthermore, evidence still mostly originates from the university setting of EFL (ESL), especially in China. Much of this focus has helped the field develop but has curtailed the scope of learners, educational contexts, and sociocultural contexts included in the literature.

Even less is understood about the link between flow and EFL (ESL) learning outcomes. There is extensive evidence in the literature that engagement, enjoyment, motivation, and other positive learning experiences are linked to flow. In this regard, the field has been quite successful in describing conditions for which flow is likely. Little is known about the role flow

plays in EFL (ESL) learning as such. There is still a lack of direct links between flow and long-term educational success, skill development, or language proficiency. Consequently, there is more research that has been done on what causes flow than on the impact flow has on learning.

In conclusion, these observations indicate that the field is in a new phase of development. Previous research has focused primarily on determining if flow does exist in EFL (ESL) learning and identifying its precursors. Nowadays the research on flow is directed more towards the question of what flow is, how it develops, and what its significance is in education. It is not only important to find more correlates of flow but also to build a more integrated understanding of how flow emerges, evolves, and relates to EFL (ESL) learning processes over time. It is important that these questions be answered if flow research is going to become more than a description focused upon a fuller explanation of the role of flow in EFL (ESL) teaching and learning.

Conclusion

This review is a scoping one that collates and summarizes 47 empirical studies related to flow in EFL (ESL) teaching and learning from the years 2000 to 2026. All in all, the literature indicates that research on flow in EFL (ESL) education is moving into a new stage. Initial research primarily confirmed the presence of flow experience and outlined the circumstances for its occurrence. But more recent research paints a more complicated picture. Flow is not a one-dimensional, steady-state, and always-achievable psychological phenomenon but rather a continually evolving phenomenon that depends on a relationship among the learners, the teachers, the tasks, the technologies, and the learning environments.

A more detailed reading of the texts shows a number of trends that contradict widely held beliefs about EFL (ESL) learning and teaching. The first one is the flow conditions. While clear goals, immediate feedback, and challenge–skill balance are important aspects of flow experiences, they will have different effects on different tasks, in different learning contexts, and for different learners. Some things that are considered necessary in one teaching context may not be as vital in another context. An additional pattern has to do with flow and unfavorable emotions. Based on reviewed studies, it is believed that flow and emotions like anxiety do not have to be opposing states. Rather, their association seems to be contingent, fluid, and contingent on the context and the individual. At the methodological level, the emphasis on cross-sectional, self-report studies has led to a snapshot view of a phenomenon in which it is now known that it is fluid, context-sensitive, and temporally variable. There are few longitudinal and repeated-measure studies and therefore a lot more to learn about flow development over time.

The most important thing to be noted from this review is what remains undone. In spite of over 20 years of research, there is still surprisingly little direct evidence of flow's connection to measurable language-learning outcomes. The literature shows some relationships between flow and engagement, enjoyment, motivation, and other positive experiences, but less is known about the influence of flow on proficiency, skill development, and long-term achievement. Thus, the major issue that the field is now grappling with is not if but how and how much flow leads to meaningful learning outcomes and under which circumstances.

From this viewpoint, the development in the future is less on identifying more correlates of flow but more on explaining the role of flow in EFL (ESL) teaching and learning processes. Studies will be especially needed that are able to follow the development, variation, and impact of flow through time. Longitudinal designs, experience sampling designs, qualitative studies, and mixed-methods studies provide avenues for examining aspects of flow that have not been well studied through traditional survey techniques. It is also crucial that empirical evidence linking flow experiences to learning outcomes be strengthened to better understand the educational significance of the construct beyond the fact that it is associated with positive subjective experience.

Flow is one of the most influential constructs in the field of EFL (ESL) learning research today. But the field is now at a stage where it's not enough to just show flow. The challenge is now to explain how flow works, how it evolves, and why it is important for language learning. To answer these questions, it is necessary to go beyond static, decontextualized depictions of flow and to adopt a process-oriented, dynamic, and contextually situated view of optimal learning experiences. It is unclear and still remains to be explored whether flow will become a core concept of language learning or whether flow is largely a measure of optimal experience.

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