

ORIGINAL ARTICLE

Interaction-Seeking Behavior in Second Language Learning: The Role of Regulatory Modes

Yixin Qian | Mostafa Papi

Florida State University, Tallahassee, Florida, USA

Correspondence: Mostafa Papi (mpapi@fsu.edu)

Received: 18 March 2026 | Revised: 14 August 2026 | Accepted: 21 August 2026

Keywords: interaction | interaction-seeking behavior | proactive language learning theory | regulatory mode theory

关键词: 调节模式理论 | 主动语言学习理论 | 互动寻求行为 | 主动互动 | 互动自察

ABSTRACT

This study investigated how trait-level regulatory modes influenced L2 learners' interaction-seeking behavior (ISB) and L2 regulatory modes. To this end, 218 university-level foreign language learners in the United States completed a questionnaire that measured their ISB and both general and L2-specific regulatory modes. Factor analysis confirmed the two-factor structure of ISB: *Proactive interaction*, concerned with seeking and engaging in interaction, and *interaction monitoring*, characterized by observing, evaluating, and adjusting one's L2 interaction behavior. Generalized additive models revealed that locomotion, a dispositional tendency to move from one state to another, predicted learners' proactive interaction and interaction monitoring, whereas assessment, a dispositional tendency to think, evaluate, and analyze before acting, showed a more limited predictive role. Similarly, general locomotion significantly predicted both L2 regulatory modes, whereas general assessment predicted only L2 assessment. These findings highlight the role of locomotion in facilitating learners' proactive engagement in L2 interaction and suggest that regulatory mode theory provides a useful lens for understanding individual differences in ISB and L2-specific self-regulation.

摘要

本研究考察了人拥有的特质层面的调节模式如何影响二语学习者的目标语言互动寻求行为(interaction-seeking behavior, ISB)和二语调节模式。218名美国大学外语学习者完成了一份问卷,测量其目标语言互动寻求行为以及一般调节模式和二语特定调节模式。因素分析确认了互动寻求行为的双维结构:主动互动,即主动寻求并参与互动;以及互动自察,即观察、评估并调整自身的二语互动行为。广义加性模型结果显示,行动导向,即个体从一种状态转向另一种状态的倾向,能够预测学习者的主动互动和互动自察;而评估导向,即个体在行动前进行思考、评价和分析的倾向,其预测作用相对有限。类似地,一般行动导向显著预测两种二语调节模式,而一般评估导向仅预测二语评估导向。这些发现凸显了行动导向在促进学习者主动参与二语互动中的作用,并表明调节模式理论为理解互动寻求行为和二语特定自我调节中的个体差异提供了有价值的视角。

1 | Introduction

Second language acquisition (SLA) is influenced by a range of learning behaviors, with interaction playing a central role

(Gass et al. 2025; van Lier 2014). Long's (1981, 1996) interaction hypothesis posits that successful SLA relies on modified output, particularly in exchanges between native and non-native speakers. Interaction provides learners with opportunities to

negotiate meaning, receive feedback, and engage in authentic practice, facilitating gains in communicative skills (Gass and Mackey 2007). Empirical studies have confirmed that such interaction promotes L2 acquisition (e.g., Ellis 2008; Gass et al. 1998; Loewen and Sato 2018; Long 1981; Swain and Suzuki 2008), prompting recent research to investigate not only its overall effectiveness but also the components, contexts, and learner characteristics that maximize its learning outcomes (Mackey et al. 2012; Ortega 2007). However, while such studies shed light on the mechanisms by which the interaction process unfolds within specific communicative episodes and influences L2 learning outcomes (Loewen and Sato 2018), they provide limited insight into learners' long-term orientation in using interaction as a means of L2 development (Atkinson 2011; Gurzynski-Weiss 2017).

To bridge this gap, Papi and Hiver (2025) have recently conceptualized interaction-seeking behavior (ISB) as one of the four dimensions of proactive L2 learning behavior in the proactive language learning theory (PLLT). PLLT conceptualizes learners as proactive agents who strategically seek out and use learning opportunities to enhance their L2 knowledge and skills. PLLT outlines ISB, along with input-seeking, feedback-seeking, and information-seeking, as four proactive learning behaviors shaping L2 acquisition. The present study specifically focuses on the examination of ISB, which is defined as "learners' agentic and strategic efforts in seeking, creating, and using L2 interaction opportunities (e.g., hosting or attending social events, interacting with colleagues, participating in class discussions) for the purpose of L2 learning" (Papi and Hiver 2025, 306). ISB encompasses two related behaviors: *Proactive interaction*, which concerns seeking and engaging in L2 interaction opportunities, and *interaction monitoring*, which involves evaluating and adjusting one's interaction behavior based on one's current or past interactional experiences (Papi et al. under review; Papi and Sato 2026). A few studies have explored how learners engage in interaction-seeking behaviors (e.g., Farhang and Papi 2025), how these behaviors can contribute to L2 proficiency (e.g., Papi and Sato 2026), and how they can be enhanced through reflective engagement on one's interaction behavior (e.g., Chiocca 2025). However, we are not aware of any studies that have examined why some learners engage in ISBs more actively than others and what accounts for individual differences in learners' orientation to L2 interaction. To address this gap, the present study employs regulatory mode theory (RMT; Kruglanski et al. 2000) to examine how learners' motivational dispositions are associated with these behaviors.

The selection of the RMT as the theoretical lens for this study was primarily motivated by the conceptual alignment between the RMT, a theory of personality that outlines how individuals engage in goal-directed behavior, and the ISB, which represents learners' engagement in L2 interaction to further the goal of L2 acquisition. Specifically, RMT proposes that individuals possess two independent self-regulatory modes that govern goal-directed action: *Assessment* and *locomotion*. According to Kruglanski et al.'s (2000), the assessment mode "constitutes the comparative aspect of self-regulation concerned with critically evaluating entities or states, such as goals or means in relation to alternatives in order to judge relative quality" (p. 794). By contrast, the locomotion mode constitutes "the self-regulatory aspect concerned with movement from state to state and with committing the psychological resources that will initiate and maintain goal-

directed progress in a straightforward manner, without undue distractions or delays" (p. 794).

These two modes can function independently, simultaneously, or even competitively, depending on the cognitive and temporal demands of a given task (Kruglanski et al. 2010). RMT's emphasis on how individuals engage in goal-directed behavior aligns with the conceptual underpinnings of proactive behaviors such as ISB, which also outline how learners seek and use interaction as a means of L2 development. The distinction between assessment and locomotion corresponds with the two dimensions of the ISB—proactive interaction and interaction monitoring—making RMT a potentially useful framework for understanding individual differences in these learning behaviors. Specifically, the locomotion mode is expected to be associated with learners' tendency to seek and engage in L2 interaction, whereas the assessment mode is anticipated to be associated with learners' tendency to monitor, evaluate, and adjust their interactional performance. Accordingly, RMT offers a useful lens for understanding the regulatory dispositions that may shape learners' ISBs. Exploring such links may offer insight into how trait-level individual characteristics, such as regulatory mode, can account for differences in L2-specific learning behaviors, and how such insights can be harnessed to promote learners' engagement in different learning behaviors (Papi 2018). Accordingly, the present study aims to explore how trait-level regulatory modes of assessment and locomotion are associated with L2 learners' engagement in ISB for the purpose of L2 acquisition.

In addition to examining the direct associations between general regulatory modes and ISB, the present study also considers how general regulatory modes are related to their L2-specific counterparts. Although assessment and locomotion are conceptualized as broad self-regulatory orientations that guide goal-directed behavior across domains, these tendencies may also be expressed in domain-specific ways in language learning (Teimouri et al. 2022). For example, learners with a stronger general locomotion orientation may be more likely to approach L2 learning with a sense of movement, persistence, and readiness to act, whereas learners with a stronger general assessment orientation may be more inclined to evaluate their progress, compare alternatives, and monitor the quality of their L2 learning behaviors. Examining the associations between general and L2-specific regulatory modes can therefore help clarify whether broad motivational dispositions are reflected in learners' language-learning-specific regulatory orientations.

2 | Literature Review

2.1 | Interaction in Language Learning

Interaction has long played a central role in second language acquisition (SLA) research (Loewen and Sato 2018). Rooted in Long's Interaction Hypothesis (1981, 1996), this line of work posits that successful SLA relies on modified interaction. Extensive empirical research has since confirmed that interaction facilitates L2 development. Building on this consensus, researchers have shifted from examining the overall effectiveness of interaction to investigating which components of interaction are most effective for which learners and in which contexts (Mackey

et al. 2012). Current research spans multiple strands, including components of interaction, interlocutor and task characteristics, linguistic targets, interactional contexts, methodological issues, and individual learner differences (Loewen and Sato 2018).

A fundamental condition for effective interaction is that learners play an active role in the language learning process. Although learners' interaction behavior has not been explored in research on individual differences in L2 learning, numerous studies have explored the notion of WTC, which is considered an antecedent of the actual interactional behavior (Peng 2019) and L2 performance (Zhang et al. 2023). WTC has been associated with a range of affective, motivational, and self-perception variables. For example, Teimouri (2017) found that among future L2 selves, the ideal L2 self, which represents the L2 attributes one ideally imagines acquiring, positively and strongly predicted WTC (Teimouri 2017). Khajavy et al. (2016) found that classroom environment, communicative confidence, motivation, and L2 proficiency predicted WTC. In a meta-analysis, Elahi Shirvan et al. (2019) found that WTC was positively associated with motivation and perceived communicative competence, and negatively associated with L2 anxiety. The relationship between personality and WTC was examined by Zhang et al. (2023), who found that openness, conscientiousness, and agreeableness were associated with WTC.

More relevant to this study, Teimouri et al. (2022) examined L2-specific regulatory mode in relation to WTC. The researchers found that L2 assessment weakly and L2 locomotion strongly predicted WTC, suggesting that learners' domain-specific regulatory orientations may shape their willingness to initiate and sustain L2 communication. Collectively, these findings show how individual learner characteristics can shape learners' WTC. However, less is known about whether broader, trait-level regulatory modes are reflected in learners' L2-specific regulatory orientations. In other words, it remains unclear whether learners who are generally inclined toward locomotion or assessment also demonstrate corresponding regulatory tendencies in language-learning contexts. The present study seeks to bridge this gap.

2.2 | ISB Within the Framework of PLLT

According to proactive language learning theory (Papi and Hiver 2025), language learners acquire a new language through proactive behaviors aimed at augmenting exposure to and use of L2 input, interaction, feedback, and information. Proactive language learners seek and capitalize on learning opportunities through such input-seeking, interaction-seeking, feedback-seeking, and information-seeking behaviors to enhance their L2 knowledge and skills. While the other dimensions of PLLT focus on L2 input, corrective feedback, and metalinguistic information, ISB refers to the actions learners intentionally take to seek and use opportunities for meaningful communication in the target language. Instead of passively waiting for interaction, learners actively seek out conversational partners, tasks, or environments that allow them to practice and negotiate meaning. It may include initiating conversations with peers, teachers, or native speakers, asking questions to maintain dialogue or clarify meaning, or joining clubs, groups, or online communities where the target language is used. ISB increases learners' likelihood of being exposed to authentic language, triggers negotiation of meaning,

helps them identify their knowledge gaps, and creates more opportunities to practice language in real time.

Although ISB is a relatively recent construct, its two primary dimensions—proactive interaction and interaction monitoring—are grounded in foundational SLA interaction research. Proactive interaction aligns with interactionist perspectives that emphasize learners' active role in creating opportunities for language development through communicative exchanges, negotiation for meaning, and output production (Long 1996; Swain 1995). From this perspective, learners are not passive recipients of input but active participants who shape their linguistic environment and generate opportunities for modified input, feedback, and output practice (Gass and Mackey 2007; Mackey 1999). Interaction monitoring, in contrast, is supported by cognitive-interactionist research on noticing, corrective feedback, learner uptake, and modified output (Lyster and Ranta 1997; Schmidt 1993). This dimension reflects learners' attention to linguistic cues and feedback during interaction, as well as their efforts to adjust language use in response to communicative demands. The two dimensions of ISB capture both the behavioral creation of interaction opportunities and the cognitive monitoring of language use during real-time communication.

While related, these two dimensions of ISB do not always necessarily overlap. Schmidt's (1983) case study of Wes provides a useful illustration of this distinction. Wes was a successful Japanese entrepreneur who worked in Hawaii and spoke English as a second language. In his communicative exchanges, Wes was highly proactive: he actively cultivated relationships with shopkeepers, waitresses, workers, and other community members, and regularly placed himself in situations that required extended communication in English. These behaviors reflect proactive interaction because they involve actively creating and sustaining opportunities for communication. However, Wes's case also shows that frequent interaction did not necessarily entail monitoring. Although engaged extensively with English speakers, his primary focus was on communicating meaning rather than attending to linguistic form, and he showed limited concern for grammatical accuracy. As a result, his grammatical development remained limited despite years of extensive interactional experience. This example illustrates that proactive interaction and interaction monitoring may co-occur, but they are conceptually distinct and need not develop in tandem (Schmidt 1983). Therefore, the present study aims to explore how learners' trait-level regulatory modes (Kruglanski et al. 2000; Teimouri et al. 2022) might account for individual differences in L2 learners' ISB.

Among different proactive L2 learning behaviors, a growing number of studies have explored feedback-seeking behavior (e.g., Mahbodi et al. 2025; Papi et al. 2019, 2020, 2026; Wang and Zheng 2026), and information-seeking behavior (e.g., Qian et al. 2026). However, studies on ISB have remained limited mainly due to its recent introduction to the field (e.g., Chiocca 2025; Farhang and Papi 2025; Papi and Sato 2026). For instance, Farhang and Papi (2025) conducted a preliminary study on ISB and identified three interrelated dimensions: Proactive seeking, proactive interaction engagement, and proactive interaction monitoring. Proactive seeking is learners' active pursuit of opportunities where English is spoken, such as social events, community or volunteer activities, and digital platforms. Once opportunities

arise, learners initiate interaction engagement by participating in activities such as academic discussions, conversations with peers and lab mates, chatting with native speakers in social settings, and even using routine or required interactions as deliberate opportunities to build fluency. Finally, through interaction monitoring, learners evaluate and adjust their interaction performance by observing and reviewing their conversations, noticing gaps in their vocabulary, grammar, or fluency, comparing their usage with native speakers, and forming and testing new expressions in their interactions. This study highlighted how learners creatively and proactively engage in the entire interaction process, vividly illustrating their ISB.

Chiocca (2025) examined how interaction-seeking can be cultivated through structured reflection in recurring exchanges, even among beginner learners. In an eTandem context, students were found not only to participate in assigned conversations but also to expand and shape interaction opportunities (e.g., requesting additional meetings, extending contact beyond the task, and shifting toward more authentic communicative goals). They also proactively managed interactional conditions that supported learning, such as negotiating language choice to sustain target-language use when needed, and increasingly asking for clarification, slower speech, or written spellings to keep interaction comprehensible and productive. Crucially, the transcription-and-guided reflection cycle strengthened interaction monitoring, as learners used transcripts to notice interactional problems and set concrete goals for subsequent conversations, making interaction seeking an iterative, self-regulated pattern rather than a one-time event.

The latest study conducted by Papi and colleagues (Papi and Sato 2026, Papi et al. under review) advanced the concept of ISB by further conceptualizing the construct and developing a questionnaire to measure its subcomponents. Using qualitative and quantitative data from two distinct L2 contexts, ISB is described through two related but distinct dimensions: Proactive Interaction, which refers to seeking and engaging with L2 interaction opportunities, and Interaction Monitoring, characterized by evaluating and adjusting one's language use during or after communication. The researchers developed and validated ISB scales across two contexts to strengthen generalizability: 208 L2-Spanish learners in Florida and 533 L2-English learners in Iran. In both samples, a two-factor model fit better than a single general factor, and ISB significantly predicted self-assessed speaking proficiency. Context shaped which dimension mattered more: Proactive Interaction was the stronger predictor in the US, whereas Interaction Monitoring was stronger in Iran. Although learners' proactive interaction varied across settings due to differences in available resources (e.g., social events vs. apps/peer groups), their interaction monitoring appeared broadly similar, underscoring learners as "architects" of their learning.

Overall, these studies show that learners are active participants in language acquisition, seek available resources, and create and take advantage of opportunities for interaction to enhance their L2 proficiency. Examining ISB offers valuable insight into how learners accomplish L2 acquisition through their proactive engagement in ISB. However, not all learners engage in ISB to the same extent or in the same way. Such differences in ISB could be due to different individual or contextual variables that remain to be explored (Papi and Hiver 2025). To take a step in this direction, the present study will use RMT (Kruglanski et al. 2000; Teimouri

et al. 2022) to examine how learners' regulatory dispositions for assessment and locomotion influence their ISB. Therefore, this study can identify the learner dispositions that motivate them to engage in ISB and offer theoretical and practical implications for enhancing such proactive behaviors.

2.3 | Regulatory Mode Theory

Regulatory mode is a psychological construct that reflects an individual's motivational tendencies during goal pursuit, in which the two modes shape goal-directed behavior, namely assessment and locomotion (Kruglanski et al. 2000). The assessment mode represents the evaluative aspect of self-regulation, involving the comparison of alternative goals or means to determine the most appropriate ones and to evaluate performance (Kruglanski et al. 2000). Learners who are typical assessors are cautious about setting their ultimate goals and about deciding how best to attain them. Those with a locomotion orientation are mainly concerned with moving from one state to another, dedicating psychological resources to initiating and sustaining a goal-directed process. In other words, those with a strong locomotion orientation are inclined to initiate action promptly and maintain steady movement toward their goals without disruption.

The locomotion mode is linked to heightened motivation and achievement (Kruglanski et al. 2000). Individuals with a strong locomotion orientation are typically decisive (Webster and Kruglanski 1994) and less prone to procrastination (Pierro et al. 2013). They focus on progress rather than reflection, showing little inclination to dwell on the past (Pierro et al. 2008) or to experience nostalgia (Pierro et al. 2013). Such individuals often pursue readily attainable goals (Kruglanski et al. 2000) and favor immediate, smaller rewards over larger, delayed rewards (Guo and Feng 2015). In contrast, assessors are more concerned with avoiding errors (Herman 1990) and tend to engage in reflection and evaluation based on past experiences (Pierro et al. 2008). They hold themselves to higher performance standards and are more likely to delay action or procrastinate (Pierro et al. 2013). Although assessors generally take longer to complete tasks, their work is often characterized by greater accuracy and precision (Kruglanski et al. 2000).

2.4 | Regulatory Mode Theory in SLA

One of the first studies applying regulatory mode theory to SLA was conducted by Papi et al. (2023). The study focused on elucidating how assessment and locomotion modes were associated with learners' complexity, accuracy, and fluency of oral L2 performance as well as L2 proficiency. In this study, assessment is conducive to syntactic complexity, lexical diversity, reduced dysfluencies, and overall proficiency. By contrast, locomotion facilitated learners' L2 fluency and increased the number of errors. In a similar study in the context of L2 writing, Eom and Papi (2022) found that learners characterized by a stronger assessment mode demonstrated higher levels of complexity and accuracy. In contrast, those with a locomotion orientation showed reduced accuracy. The authors of these two studies argued that these differences could be attributed to assessors' tendency to monitor and evaluate their L2 use and the learners' willingness to engage in more interaction without much monitoring.

To further specify the regulatory mechanisms underlying L2 learning, Teimouri et al. (2022) developed an instrument to measure L2 regulatory modes (L2 assessment and L2 locomotion). In addition, they found that both L2 regulatory modes were positively associated with WTC, intended effort, and learning awareness, particularly with locomotion strongly predicting WTC. Consistent with expectations, negative emotions such as language-related anxiety were positively linked to assessment, whereas L2 joy was predominantly predicted by locomotion. The study also found that learners with stronger tendencies in both locomotion and assessment showed the highest levels of WTC (and other motivational and affective measures) than those who were driven by one or the other. Based on these results, the authors suggested that “optimal self-regulation builds on both modes of the self-regulatory system with assessment mode acting as a guiding constraint on locomotion mode” (p. 652).

The L2-specific scales developed by Teimouri et al. (2022) to measure L2 locomotion and L2 assessment have an exclusive focus on L2 speaking in the SLA context. Given the centrality of action in human functioning and the integral roles of assessment and locomotion in guiding action (Kruglanski et al. 2013), these tendencies are likely to exert a pervasive influence on learners’ L2-specific regulatory modes. In other words, because assessment and locomotion represent important motivational tendencies that regulate how individuals initiate, sustain, and evaluate goal-directed actions, these regulatory modes may also shape how learners initiate, sustain, and monitor their learning behaviors in language-learning contexts.

The present study includes both general and L2-specific regulatory modes, as these constructs represent related but theoretically distinct manifestations of learners’ self-regulatory tendencies. General regulatory modes describe domain-general dispositions toward action (locomotion) and evaluation (assessment), whereas L2 regulatory modes capture how these dispositions are expressed within language-learning contexts.

Although general and L2-specific regulatory modes appear conceptually similar, important distinctions remain. L2 locomotion primarily reflects learners’ tendencies to participate and speak in classroom contexts, whereas general locomotion captures broader trait-level tendencies across social, academic, and community settings. Similarly, L2 assessment focuses on learners’ tendencies to analyze and evaluate their language use, whereas general assessment reflects a broader tendency to compare, evaluate, and critically appraise actions, options, and outcomes across domains. Consequently, L2-specific regulatory modes can be viewed as domain-specific manifestations of learners’ broader regulatory tendencies.

Including both general and L2-specific regulatory modes, therefore, serves two purposes. First, it allows for an examination of the extent to which domain-general regulatory modes are translated into domain-specific motivational orientations and interaction-related learning behaviors, especially given that Teimouri et al. (2022) did not test this relationship. Second, it provides an opportunity to evaluate the conceptual distinctiveness of general and L2 regulatory modes despite their apparent overlap. If general regulatory modes show similar patterns of association with both constructs, this suggests that they represent related

manifestations of the same underlying self-regulatory dispositions. Conversely, distinct patterns of association would indicate that general and L2-specific regulatory modes capture different aspects of learners’ engagement in language learning.

To understand such potential connections, this study explores how general regulatory modes are associated with learners’ ISB and L2-specific regulatory modes. Based on these objectives, the following research questions were formulated:

RQ1: What Is the Relationship Between Learners’ general Regulatory Modes (Assessment and Locomotion) and Their ISB (Proactive Interaction and Interaction Monitoring)?

RQ2: What Is the Relationship Between Learners’ general Regulatory Modes (Assessment and Locomotion) and Their L2-specific Regulatory Modes?

3 | Method

3.1 | Participants

The study initially recruited 218 adult learners (125 women, 86 men, 7 others) with a mean age of 22.24 years from a large public university in the United States. Participants were studying a wide range of languages, including French ($n = 62$), Japanese ($n = 55$), Italian ($n = 34$), Spanish ($n = 23$), with the remaining learners enrolled in 14 additional languages. English was the first language of most participants ($n = 172$), followed by Spanish ($n = 46$). Most participants reported novice to intermediate proficiency levels (84.6%), with the remainder identifying as advanced learners. Participants were recruited through language course announcements and completed the questionnaires voluntarily, either online via Qualtrics or during class sessions. Participants were informed that their participation or non-participation would have no impact on their course grades or academic standing. The study received Institutional Review Board approval, and informed consent was obtained. Because not all participants completed every section of the study, the sample size may vary slightly across analyses depending on the availability of responses for the measures included in each analysis.

3.2 | Instruments

Participants’ ISBs were measured using a questionnaire (ISBQ; Papi and Sato 2026, Papi et al. under review) comprising two subscales. Six proactive interaction items assessed learners’ efforts to create opportunities to use the target language. An example item was “I practice speaking my target language at social gatherings (such as get-togethers, parties, game nights, etc.) where they speak this language.” Six interaction monitoring items examined learners’ reflections on and adjustment of their interaction behavior. An example item was: “I reflect on and adjust how I speak the language to improve my speaking skills.”

General regulatory orientations were assessed using the Regulatory Mode Questionnaire (RMQ; Kruglanski et al. 2000). Following EFA and corresponding item deletion, the scale contains seven locomotion items (e.g., I am a doer.) and five assessment

items (e.g., I often compare myself with other people.). The domain-specific regulatory modes were measured with the L2 Regulatory Mode Questionnaire (L2RMQ; Teimouri et al. 2022), which consisted of 5 items for L2 locomotion (e.g., I often look for any chance to speak English in my class.) and 4 items for L2 assessment (e.g., I often analyze the structures of my sentences before speaking English.). All instruments employed a 6-point Likert scale; however, the general and L2-specific regulatory mode measures assessed agreement with statements (1 = strongly disagree, 6 = strongly agree), whereas the ISB measure assessed the frequency of behavior (1 = never or rarely, 6 = constantly). Each questionnaire included one attention-check item (e.g., If you're reading this item, choose 'constantly.'). Participants who failed two or more attention checks were excluded. Therefore, the final sample consisted of 202 participants. All questionnaire items appear in the [Supplementary File](#).

3.3 | Data Analyses

All analyses were conducted in R (version 4.4.1). Descriptive statistics and Shapiro–Wilk tests, supported by visual inspections, were used to evaluate distributional characteristics. Because the RMQ (Kruglanski et al. 2000) was developed in a general psychological context and has rarely been examined among L2 learners, an exploratory factor analysis (EFA) was conducted to evaluate whether its factor structure replicated in the present sample before testing structural relationships. Confirmatory factor analyses (CFAs) on the ISBQ and L2RMQ were conducted in lavaan using the robust Maximum Likelihood estimator (MLR). Model evaluation followed standard procedures, including factor loadings, modification indices, χ^2 , the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). Scale reliability was assessed using Cronbach's alpha, and associations among the main variables were examined using Pearson correlations.

After validating the measurement models, Generalized Additive Models (GAMs) were fitted using mgcv package to assess linear and nonlinear relationships between general and L2-specific regulatory modes and the two ISB outcomes. GAMs were selected as a flexible analytic approach to test whether general regulatory modes predicted L2 regulatory modes and the two ISB outcomes, while allowing these associations to take either linear or nonlinear forms. Model diagnostics indicated an acceptable fit, and the results further suggested that several predictors exhibited nonlinear relationships with ISB outcomes. GAMs were estimated using restricted maximum likelihood (REML), with both main-effects and interaction models examined. Model comparison relied on AIC and likelihood-ratio tests, with smooth terms estimated using thin-plate regression splines within the GAM framework.

4 | Results

4.1 | Exploratory Factor Analysis

An EFA with principal axis factoring (PAF) as the extraction method and direct Oblimin as the rotation method was conducted on general regulatory mode items. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was 0.81, exceeding the

recommended minimum value of 0.60, and Bartlett's test of sphericity was significant, $\chi^2(66) = 758.14$, $p < 0.001$, indicating that the correlation matrix was factorable. The values confirmed that the data were suitable for factor analysis. The initial solution yielded five factors, with three having one to three primary loadings. However, inspection of the scree plot, factor interpretability, and theoretical expectations of RMT supported retaining a two-factor solution.

The final solution consisted of 12 items and accounted for 52.16% of the total variance. Factor 1 had an eigenvalue of 3.60 and explained 29.96% of the variance, whereas Factor 2 had an eigenvalue of 2.66 and explained 22.20% of the variance. The pattern matrix revealed a clear two-factor structure with minimal cross-loadings. Seven items loaded on the first factor, locomotion, with loadings ranging from 0.50 to 0.79, whereas five items loaded on the second factor, assessment, with loadings ranging from 0.58 to 0.73. Communalities ranged from 0.32 to 0.62, indicating adequate representation of the items by the retained factors. The two factors were weakly correlated ($r = 0.15$), supporting the relative independence of the locomotion and assessment regulatory modes. Cronbach's alpha coefficient was 0.81 for locomotion and 0.78 for assessment, supporting the internal consistency of the scales. Descriptive statistics indicated relatively high levels of both locomotion ($M = 4.21$, $SD = 0.91$) and assessment ($M = 4.38$, $SD = 0.99$). Skewness and kurtosis values fell within acceptable ranges, suggesting no substantial departures from normality. In sum, the EFA supported a theoretically interpretable two-factor structure corresponding to the locomotion and assessment dimensions proposed by Regulatory Mode Theory and provided evidence for the construct validity of the RMQ in the present sample (see Table 1).

4.2 | Confirmatory Factor Analysis

CFAs were conducted to evaluate the measurement models for both the ISBQ and the L2RMQ. All CFAs were conducted in lavaan using the MLR. Before estimating the CFA models, descriptive statistics were examined to assess the distributional properties of the observed variables. Because several items showed moderate skewness, MLR was used to obtain robust standard errors and a scaled chi-square statistic.

For the ISBQ, the CFA tested a two-factor measurement model comprising proactive interaction and interaction monitoring. The initial model included six items for each construct. Model fit was evaluated using multiple global fit indices. The initial two-factor model did not adequately fit the data, $\chi^2(53) = 186.098$, $p < 0.001$, CFI = 0.876, robust CFI = 0.882, TLI = 0.846, robust TLI = 0.853, RMSEA = 0.108, 90% CI [0.092, 0.124], robust RMSEA = 0.117, 90% CI [0.099, 0.135], and SRMR = 0.123. Although the chi-square test was statistically significant, which is common in models with multiple indicators and larger samples, several key fit indices did not meet recommended criteria. Based on the CFA results and modification indices, Items 7 and 11 were removed. The revised ISBQ model (Table 2) showed improved and adequate global fit, with higher robust CFI and TLI values and lower robust RMSEA and SRMR values. The final ISBQ CFA model is presented in Figure 1.

TABLE 1 | Exploratory factor analysis of the regulatory mode questionnaire ($N = 208$).

Item	<i>M</i>	<i>SD</i>	<i>F1</i>	<i>F2</i>	<i>h</i> ²
Q23	4.40	1.19	0.794	−0.061	0.623
Q9	4.49	1.11	0.691	0.002	0.478
Q21	4.32	1.22	0.676	−0.057	0.451
Q3	3.62	1.37	0.612	0.140	0.414
Q17R	3.94	1.50	0.578	−0.238	0.360
Q13	4.52	1.23	0.557	0.070	0.324
Q15	4.33	1.22	0.499	0.243	0.335
Q18	3.75	1.45	0.004	0.730	0.533
Q14	4.47	1.32	0.009	0.708	0.503
Q16	4.30	1.41	0.129	0.636	0.440
Q12	4.41	1.22	0.055	0.586	0.354
Q8	4.14	1.53	−0.140	0.576	0.333

Note: $N = 208$. Extraction method = Principal Axis Factoring. Rotation method = Oblimin with Kaiser normalization. KMO = 0.81. Bartlett's test of sphericity: $\chi^2(66) = 758.14$, $p < 0.001$. Factor correlation = 0.15. Communalities are reported in the final column. Reverse-scored items are indicated by R. Loadings ≥ 0.30 are interpreted.

TABLE 2 | Global fit indices for the two-factor CFA model.

Fit Index	ISB	L2RM
CFI	0.950	0.947
Robust CFI	0.953	0.955
TLI	0.933	0.927
Robust TLI	0.938	0.937
RMSEA	0.080 (90% CI [0.060, 0.101])	0.066(90% CI [0.039, 0.092])
Robust RMSEA	0.087 (90% CI [0.063, 0.111])	0.070(90% CI [0.036, 0.102])
SRMR	0.052	0.050

Abbreviations: CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; TLI, Tucker-Lewis index. Robust estimates are based on the MLR estimator. *** $p < 0.001$.

A separate CFA was then conducted for the L2RMQ. Unlike the initial ISBQ model, the L2RMQ measurement model showed adequate global fit in the first test and therefore did not require item deletion or further modification. The CFA results for the L2RMQ are reported in Table 2.

4.3 | Descriptive Statistics, Reliability, and Correlational Analyses of Study Variables

The analyses focused on four dependent variables (proactive interaction, interaction monitoring, L2 locomotion, and L2 assessment) and two independent variables. As shown in Table 3, the variables showed moderate variability, with mean scores spanning the mid to upper ranges of the scales. Skewness values indicated mild asymmetry, and kurtosis values suggested modest departures from normality, but no severe distributional abnormalities were observed. These results indicate that the data were suitable for subsequent parametric analyses. Reliability was assessed for each multi-item scale using Cronbach's alpha (see

Table 3). All scales demonstrated acceptable to excellent internal consistency, with α values ranging from 0.75 to 0.89.

Table 4 presents Pearson correlations among the study variables. Proactive interaction and interaction monitoring were moderately positively related, with interaction monitoring also showing moderate associations with locomotion and the L2-related measures, whereas assessment was weakly or not significantly related to most variables.

4.4 | Modeling Predictors of Proactive Interaction and Interaction Monitoring

In response to the first research question, GAMs were conducted to examine the effects of general locomotion and assessment on proactive interaction and interaction monitoring, allowing for potentially nonlinear relationships. Across both ISB dimensions (see Table 5), locomotion emerged as a consistent and significant predictor, with an effectively linear association. Assessment, however, significantly predicted only proactive interaction, and this

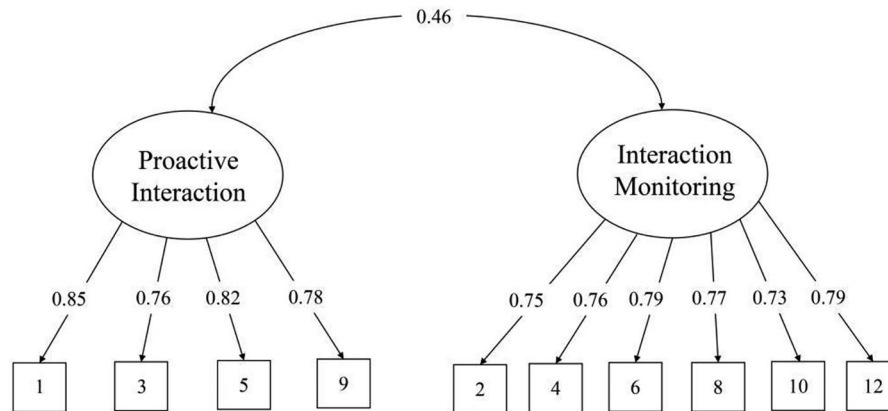


FIGURE 1 | The final confirmatory factor analysis model.

TABLE 3 | Descriptive statistics for study variables.

Variable	N	M	SD	Min	Max	S	K	α
Proactive Interaction	202	2.45	1.36	1.00	6.00	0.80	−0.46	0.879
Interaction Monitoring	202	3.94	1.12	1.00	6.00	−0.17	−0.52	0.893
Locomotion	202	4.23	0.88	1.71	6.00	−0.40	−0.09	0.814
Assessment	202	4.36	0.99	1.00	6.00	−0.56	−0.01	0.775
L2 Locomotion	202	3.95	1.00	1.00	6.00	−0.67	0.37	0.814
L2 Assessment	202	4.55	0.85	1.25	6.00	−0.70	1.22	0.746

Abbreviations: K, Kurtosis; M, mean; N, number of valid cases; S, Skewness; SD, standard deviation; α , Cronbach's alpha.

TABLE 4 | Pearson correlation coefficients among study variables.

Variable	1	2	3	4	5	6
1. Proactive Interaction	—					
2. Interaction Monitoring	0.42***	—				
3. Locomotion	0.20**	0.30***	—			
4. Assessment	−0.11	0.05	0.10	—		
5. L2 Locomotion	0.35***	0.39***	0.28***	−0.03	—	
6. L2 Assessment	−0.02	0.32***	0.20**	0.22**	0.32***	—

$p < 0.05^*$, $p < 0.01^{**}$, $p < 0.001^{***}$.

TABLE 5 | GAM results for proactive interaction and interaction monitoring.

Predictor	edf	Ref.df	F	p	Outcome
Assessment	2.38	3.02	3.23	0.02*	Proactive Interaction
Locomotion	1.00	1.00	10.63	0.001**	
Interaction	1.00	1.00	0.17	0.68	
Assessment	1.00	1.00	0.20	0.66	Interaction Monitoring
Locomotion	1.00	1.00	22.71	< 0.001***	
Interaction	2.32	2.98	2.32	0.08	

Note. Estimated degrees of freedom (edf), reference degrees of freedom (Ref.df), F statistics, and p-values are reported for each smooth term. Significance codes are as follows: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Values without symbols are not statistically significant.

TABLE 6 | GAM results for L2 locomotion and assessment.

Predictor	edf	Ref.df	F	p	Outcome
Assessment	1.00	1.00	0.65	0.42	L2 Locomotion
Locomotion	1.00	1.00	17.55	< 0.001***	
Interaction	1.00	1.00	0.01	0.92	
Assessment	1.00	1.00	7.56	< 0.01**	L2 Assessment
Locomotion	2.52	3.16	4.49	< 0.01**	
Interaction	4.95	7.43	0.96	0.46	

Note. Estimated degrees of freedom (edf), reference degrees of freedom (Ref.df), F statistics, and p-values are reported for each smooth term. Significance codes are as follows: *** $p < 0.001$, ** $p < 0.01$, $p < 0.05$. Values without symbols are not statistically significant.

association showed a nonlinear pattern. The tensor-product interaction between assessment and locomotion was not significant. The results showed that the model accounted for a modest proportion of variance in proactive interaction, with an adjusted R^2 of .071 and 9.13% deviance explained, and in interaction monitoring, with an adjusted R^2 of .115 and 13.4% deviance explained.

4.5 | Modeling Predictors of L2 Regulatory Modes

In response to the second research question, GAMs were conducted to examine the effects of general locomotion and assessment on L2 locomotion and L2 assessment. Across the two L2 regulatory mode outcomes (see Table 6), general locomotion emerged as a consistent and significant predictor. Specifically, general locomotion significantly predicted L2 locomotion, whereas both general locomotion and general assessment significantly predicted L2 assessment. The estimated smooth effects indicated that the associations between general locomotion and L2 locomotion, as well as between general assessment and L2 assessment, were approximately linear. In contrast, the association between general locomotion and L2 assessment showed a nonlinear pattern. The model for L2 locomotion showed an adjusted R^2 of .069 and 8.28% deviance explained, whereas the model for L2 assessment showed an adjusted R^2 of 0.129 and 16.6% deviance explained. The tensor-product interaction between general locomotion and assessment was not significant for either outcome.

5 | Discussion

This study explored the relationship between RMT and ISB among learners of foreign languages at a major university in the United States. Analysis of the survey data collected from 202 participants showed a meaningful pattern of results. Regarding ISB patterns, participants reported higher levels of interaction Monitoring (Mean = 3.94, SD = 1.12) than proactive Interaction (Mean = 2.45, SD = 1.36), and all scales demonstrated acceptable to excellent reliability. The two ISB dimensions were moderately correlated (Table 4), indicating that learners who proactively seek interaction also tend to monitor their interactions, although the constructs remain distinct.

5.1 | The Role of General Locomotion and Assessment in ISB

GAM results showed that trait-level locomotion significantly and positively predicted both proactive interaction and interaction monitoring, whereas trait-level assessment predicted proactive interaction. In addition, the interaction between locomotion and assessment did not significantly predict the ISB variables. The positive association between general locomotion and proactive interaction suggests that locomotion may be particularly compatible with interactional behaviors that require initiative and sustained engagement. Theoretically speaking, proactive interaction often involves seeking out and engaging in L2 interaction, even when opportunities are not readily available. Proactive interaction-seekers join communities or academic events where their L2 is spoken, visit places such as bars and restaurants where their L2 is spoken, and participate in social gatherings with L2 speakers (Farhang and Papi 2025). Our findings show that such proactive engagement in L2 interaction opportunities is associated with a locomotion mode because proactive interaction patterns, such as initiating and engaging in interaction, may require a tendency to act without much deliberation, forethought, or interruption, which are characteristics of individuals with a strong locomotion tendency (Kruglanski et al. 2000). These findings support the results of previous social psychology studies, which showed that individuals with a strong locomotion mode are more motivated (Kruglanski et al. 2000), more decisive (Webster and Kruglanski 1994), and less likely to procrastinate than others (Pierro et al. 2013). In the field of SLA, locomotion was associated with higher speed and lower accuracy in both oral (Papi et al. 2023) and written L2 production (Tabari and Farahanynia 2026), reflecting locomotors' tendency to prioritize speed over accuracy.

Surprisingly, locomotion emerged as a significant predictor of interaction monitoring. Theoretically, locomotion emphasizes movement, progress, and the initiation of action over extensive evaluation and comparison. The association between locomotion and interaction monitoring, thus, was not intuitively expected. This finding also appears to contrast with previous SLA research, which has shown that locomotion is either negatively associated with accuracy or unrelated to L2 complexity (Tabari and Farahanynia 2026; Eom and Papi 2022; Papi et al. 2023).

One explanation for this result could be related to the logical dependence of interaction monitoring on proactive interaction. Because interaction monitoring involves evaluating and adjusting one's interactional behavior, opportunities for monitoring arise only when learners actively engage in interaction. Thus, learners with stronger locomotion tendencies may monitor more frequently, not because they are inherently more reflective, but because they place themselves in more communicative situations that offer opportunities for monitoring and adjustment. In other words, without learners taking action and engaging in L2 interaction, there is no interaction to monitor, regardless of their capacity or tendency to analyze their language use. Therefore, the more learners engage in interaction, the more opportunities they have to evaluate, refine, and adapt their interactional behavior. This interpretation is also consistent with the moderate association observed between proactive interaction and interaction monitoring, suggesting that although the two dimensions are conceptually distinct, they often operate in tandem (Teimouri et al. 2022).

A second, perhaps complementary, explanation concerns the nature of interaction monitoring itself. Although interaction monitoring includes an evaluative component, it is not limited to evaluation. Rather, it involves evaluating, adapting, and adjusting one's communicative behavior in response to interactional experiences. Effective communication requires learners not only to notice problems or gaps in their language use, but also to modify their behavior to maintain the interaction and achieve their communicative goals. From this perspective, interaction monitoring may depend as much on learners' willingness to take action as on their tendency to evaluate performance. This could help explain why locomotion, rather than assessment, emerged as the stronger predictor. Interaction monitoring serves not only a learning function but also an immediate communicative function. Learners must notice misunderstandings, evaluate whether their intended meanings have been successfully conveyed, and adjust their language use to sustain the interaction. Monitoring, therefore, can facilitate continued action rather than impede it, thereby aligning with the action-oriented tendencies characteristic of locomotion. Consequently, interaction monitoring may be more compatible with locomotion because it supports maintaining engagement in interaction rather than prolonged reflection on language form (Kruglanski et al. 2000).

The positive relationship between assessment and proactive interaction suggests that learners with stronger evaluative tendencies may be more likely to seek opportunities for interaction. Although assessment is often associated with comparison, evaluation, and critical reflection, interaction provides a valuable context in which such learners can gather information about their language abilities, test linguistic hypotheses, and evaluate their communicative effectiveness. Through interaction, assessment-oriented learners can compare their performance against that of more proficient speakers, identify gaps in their linguistic knowledge, and obtain feedback regarding the adequacy of their language use. Consequently, proactive interaction may serve as a means through which assessment-oriented learners satisfy their desire for evaluation and self-improvement. This interpretation aligns with PLLT, which views interaction not merely as a context for communication but also as a source of information that learners

can actively exploit for language development (Papi and Hiver 2025).

Interestingly, assessment predicted proactive interaction but not interaction monitoring. One possible explanation is that assessment may motivate learners to seek interaction opportunities because interaction provides opportunities for comparison, evaluation, and learning. However, once learners are engaged in interaction, the ongoing monitoring and adjustment of communicative behavior may depend more heavily on action-oriented tendencies associated with locomotion. Thus, assessment may contribute to initiating interaction for evaluative purposes, whereas locomotion may be more important for sustaining engagement and adapting behavior during and after interaction.

Theoretically, these findings extend the role of ISB within PLLT by positioning interaction-related engagement not merely as the outcome of learners' behavioral choices but as a motivationally driven, self-regulatory process through which learners actively create, sustain, and optimize access to L2 learning opportunities. Although locomotion is conceptually related to action and initiation, and assessment is conceptually related to evaluation and comparison, these regulatory modes do not conceptually overlap with proactive interaction or interaction monitoring. Regulatory mode reflects learners' broader motivational orientations toward goal pursuit, whereas ISB refers to more specific interaction-based behaviors and cognitive efforts through which learners seek, monitor, and engage in interaction opportunities. Therefore, this study contributes to PLLT by showing how regulatory orientations may empower interaction-specific learning processes (Papi and Hiver 2025). These regulatory tendencies not only describe learners' motivational orientations but also help explain how learners translate those orientations into proactive interaction and interaction monitoring. This perspective shifts the focus from whether learners are willing to interact to how individual learners vary in how they regulate their interaction behavior as an ongoing mechanism for language learning, providing insights into how motivational dispositions lead to qualitative differences in learning behavior and outcomes (Papi 2018).

5.2 | General Regulatory Mode and L2 Regulatory Mode

The results for L2 regulatory modes largely paralleled those observed for ISB. General locomotion emerged as a significant predictor of both L2 locomotion and L2 assessment, whereas general assessment predicted only L2 assessment. The purpose of including L2 regulatory modes was to examine whether general regulatory modes manifest similarly across an established L2-specific self-regulatory construct and the newer proactive learning behaviors proposed in PLLT. These findings provide evidence for the domain-specific manifestation of regulatory modes in language learning while also raising questions about the conceptual status of the L2 regulatory mode construct. Although L2 locomotion and L2 assessment were originally proposed as language-specific motivational orientations, the observed pattern of relationships suggests that they may capture relatively specific language learning tendencies rather than broad motivational dispositions. In particular, the finding that locomotion predicted both dimensions of L2 regulatory mode indicates that action-

oriented learners may be more likely not only to participate actively in language learning activities but also to engage in the planning and analysis associated with L2 assessment. This pattern may reflect the behavioral nature of many L2 regulatory mode items, which focus on concrete classroom-related activities such as speaking, participating, planning utterances, and analyzing language use.

These findings also raise questions about the conceptual status of L2 regulatory modes within SLA. Although L2 locomotion and L2 assessment were originally proposed as domain-specific motivational orientations (Teimouri et al. 2022), many of their items describe relatively specific language-learning activities, such as classroom participation, speaking, planning utterances, and analyzing language use. At the same time, these activities remain relatively narrow in scope, focusing primarily on classroom speaking and linguistic evaluation. By contrast, the proactive learning behaviors outlined in PLLT encompass a broader range of actions through which learners actively create, seek out, monitor, and exploit learning opportunities across contexts. Consequently, while L2 regulatory modes remain useful for understanding how general self-regulatory tendencies manifest in language learning, the PLLT behaviors may provide a more comprehensive and behaviorally proximal account of how such tendencies are translated into language-learning action.

5.3 | Pedagogical Implications

The findings of the present study suggest that ISBs should be understood not only as situational responses to classroom opportunities but also as shaped by learners' self-regulatory tendencies. Because locomotion consistently predicted both proactive interaction and interaction monitoring, teachers should create classrooms that do more than provide communicative opportunities; they should also encourage learners to take initiative and sustain engagement during interaction. In line with PLLT, instruction should help learners move from passive participation to active pursuit of interaction by asking questions, initiating exchanges, seeking clarification, and following up after communication episodes (Papi and Hiver 2025). This is especially important because learners high in locomotion tend to act readily toward their goals, whereas those lower in locomotion may require more structured support to engage consistently. One useful strategy is to manipulate specific features of classroom tasks to strengthen one mode over the other when needed (Teimouri et al. 2022). For example, teachers can design tasks with tighter time limits, clear action goals, or immediate communicative demands to encourage locomotion, or they can incorporate comparison, evaluation, and reflection components to activate assessment (e.g., Chiocca 2025). Another helpful strategy is to use consciousness-raising activities to increase learners' awareness of the strengths of their self-regulatory tendencies. By helping students recognize whether they are more action-oriented or evaluation-oriented, teachers can guide them to use these tendencies more strategically and to develop compensatory strategies when one mode is less pronounced.

Project-based language learning (PBLL), which moves learners beyond passive, lecture-based instruction toward more autonomous and collaborative interaction (Tsiplakides and

Fragoulis 2009), can be a particularly useful approach for the enhancement of ISBs. Projects usually include the use of authentic language, group-centered work, student autonomy, and a variety of interactive L2 activities beyond the classroom context (Hedge 1993). Such projects could be fertile ground for enhancing ISB. For instance, Farouck's (2016) PBLL model engaged learners in fieldwork, meaningful topic selection, technology integration, presentations, peer review, and reflection. These activities can increase learners' confidence, reduce communication anxiety, and create sustained opportunities for them to initiate exchanges, seek clarification, negotiate meaning, and monitor their language use during communication.

Teachers can also build on interaction monitoring by incorporating brief post-interaction reflection tasks, self-evaluation prompts, and guided discussion of communication strategies so that learners' monitoring becomes productive rather than inhibiting. Chiocca's (2025) REFLECT model offers a useful example here, showing how cycles of interaction, transcription, and structured reflection can foster learner agency and help students become more intentional in their language development (see also Sato and Storch 2022; Sippel 2024; Ziegler et al. 2026).

At the same time, the study suggests that successful pedagogy should aim to balance action and evaluation rather than privileging either. The interaction findings further indicate that evaluative tendencies alone may not necessarily facilitate interaction monitoring when learners lack sufficient action-oriented engagement. In such cases, learners may become overly focused on errors, self-evaluation, or linguistic accuracy without actively sustaining interaction. Previous work has shown that motivational dispositions shape qualitative aspects of L2 performance, with action-oriented tendencies supporting fluency and engagement, and evaluative tendencies being more closely tied to careful monitoring of production (Papi et al. 2023; Teimouri et al. 2022). Teachers may therefore want to sequence tasks so that they first promote spontaneous interaction and then create space for reflection, revision, and strategic improvement. For example, pair- or group-speaking tasks can be followed by short reflective journals, peer debriefings, or targeted self-assessment checklists. In this way, instruction can support both the momentum needed to seek interaction and the evaluative awareness needed to learn from it. Overall, the pedagogical message is that interaction-seeking should be fostered not only by increasing communicative opportunities, but also by cultivating the self-regulatory capacities that help learners act, reflect, and improve through interaction over time.

5.4 | Limitations and Future Study

This study employed a one-time data collection design, which limited its ability to capture long-term changes in language learners' motivational tendencies and ISBs. Longitudinal pre-post-test designs can better capture how such motivational dispositions shape ISB over time. In addition, the measurement tools relied primarily on self-report questionnaires, which may not fully or objectively reflect learners' motivational tendencies or interactive behaviors. Future studies can triangulate the data using journal diaries, classroom observations, stimulated recall, eye-tracking, logged interaction history, or other behavioral data to examine

whether learners' reported regulatory tendencies correspond to observable interaction-seeking and interaction-monitoring behaviors in real-time language-learning contexts.

From a modeling perspective, the predictive power of the GAMs was modest, indicating that while regulatory mode provides a theoretically meaningful lens for understanding learners' interactive language behaviors, it accounts for only part of the variability observed. Proactive interaction and monitoring are likely shaped by a broader constellation of factors, including learners' proficiency level, length of language study, prior interactional experience, and learning context, and so forth. The omission of these variables limits our ability to isolate the unique contribution of regulatory modes, underscoring the need for future research to incorporate additional individual and contextual variables and to capture the dynamic, longitudinal nature of learners' interactive engagement. Future studies could also investigate how instructional practices can simultaneously cultivate assessment and locomotion orientations, thereby enhancing learners' interactive competence and their ability to maintain high-quality communication in target languages.

This study provided an account of ISB and the regulatory tendencies associated with it. The findings lay a foundation for future research to incorporate additional contextual, individual, and sociocultural variables and to further examine how learners regulate interactional engagement across diverse L2 learning environments. In addition, although L2 regulatory mode and ISB were treated as theoretically related but distinct constructs in the present study, some degree of conceptual overlap may exist between them. Future research should continue examining the conceptual boundaries between these constructs and determine the extent to which they capture overlapping versus distinct aspects of learner self-regulation and proactive engagement.

Finally, this study is context-bound, as it was conducted at a single U.S. university and included a sample primarily of foreign language learners. As such, the findings may not fully generalize to ESL contexts or to non-Western cultural settings. Cultural, linguistic, and institutional differences may influence learners' attitudes toward initiating interactions and monitoring their language use. Future research should therefore incorporate additional learner and contextual variables and conduct cross-cultural or multi-site replication studies to examine how motivational tendencies and ISBs manifest across diverse educational, linguistic, and cultural contexts.

6 | Conclusion

According to Papi and Hiver (2025), "language learners vary in how proactively they seek and create interaction opportunities, engage in interaction, reflect on and analyze their L2 use, and form and test L2 hypotheses that serve to contribute to their L2 development" (p. 306). By examining the motivational foundations of ISB, the present study demonstrates that regulatory modes (Kruglanski et al. 2000) are associated with learners' proactive interaction and interaction monitoring, two key components of ISB (Papi et al. under review; Papi and Sato 2026). Locomotion emerged as the most consistent predictor, suggesting that learners who are inclined to initiate and sustain goal-

directed action are more likely to seek interaction opportunities, engage actively in communication, and monitor and adjust their interactional behavior.

The findings also have broader implications for the study of self-regulation in SLA. General regulatory modes predicted both L2-specific regulatory modes and ISB, suggesting that domain-general self-regulatory tendencies are expressed through multiple forms of L2 learning engagement. Across analyses, locomotion emerged as the more influential regulatory tendency, whereas assessment played a more selective role, predicting proactive interaction and L2 assessment but not interaction monitoring or L2 locomotion. This pattern suggests that evaluative tendencies may be most relevant to planning and analysis, whereas action-oriented tendencies are more central to sustained engagement and behavioral regulation. Future research should continue examining how regulatory modes influence the proactive learning behaviors proposed in PLLT and how these behaviors contribute to language development across contexts.

Theoretically, these findings extend PLLT by identifying regulatory mode as one of the motivational foundations of ISB and by positioning ISB as a self-regulatory process through which learners actively seek, sustain, monitor, and regulate access to L2 learning opportunities. Moreover, the findings suggest that interaction functions not merely as participation or as a situational response to available opportunities, but as a proactive mechanism for learning shaped by learners' regulatory tendencies. Pedagogically, the results highlight the importance of supporting both the initiation of interaction and reflection on interaction by designing tasks that encourage learners to take initiative, sustain engagement, evaluate their performance, and adjust their interactional behavior over time.

References

- Atkinson, D. 2011. "Introduction: Cognitivism and Second Language Acquisition." In *Alternative Approaches to Second Language Acquisition*, edited by D. Atkinson, 1–23. Routledge.
- Chiocca, E. S. 2025. "The REFLECT Model: Cultivating Beginning Language Learner Agency Through eTandem Conversations, Transcriptions, and Reflections." *Journal of China Computer-Assisted Language Learning* 1–29. <https://doi.org/10.1515/jccall-2025-0009>.
- Elahi Shirvan, M., G. H. Khajavy, P. D. MacIntyre, and T. Taherian. 2019. "A Meta-Analysis of L2 Willingness to Communicate and Its Three High-Evidence Correlates." *Journal of Psycholinguistic Research* 48, no. 6: 1241–1267. <https://doi.org/10.1007/s10936-019-09656-9>.
- Ellis, R. 2008. *The Study of Second Language Acquisition*. 2nd ed. Oxford University Press.
- Eom, M., and M. Papi. 2022. "Motivational Principles Underlying Linguistic Characteristics of Second Language Writing." *Korea Journal of English Language and Linguistics* 22: 229–245. <https://doi.org/10.15738/kjell.22..202203.229>.
- Farhang, A., and M. Papi. 2025. "Interaction-Seeking Behavior in Second Language Learning: A Preliminary Exploration in the United States." *Innovation in Language Learning and Teaching* 1–18. <https://doi.org/10.1080/17501229.2025.2584372>.
- Farouk, I. 2016. "A Project-Based Language Learning Model for Improving the Willingness to Communicate of EFL Students." *Systemics, Cybernetics and Informatics* 14, no. 2: 11–18.

- Gass, S. M., and A. Mackey. 2007. *Data Elicitation for Second and Foreign Language Research*. Routledge.
- Gass, S. M., A. Mackey, and M. Montee. 2025. "Input, Interaction, and Output in L2 Acquisition." In *Theories in Second Language Acquisition: An Introduction*, edited by B. VanPatten, G.D. Keating, and S. Wulff, 183–216. Routledge.
- Gass, S. M., A. Mackey, and T. Pica. 1998. "The Role of Input and Interaction in Second Language Acquisition: Introduction to the Special Issue." *Modern Language Journal* 82, no. 3: 299–307. <https://doi.org/10.1111/j.1540-4781.1998.tb01206.x>.
- Guo, Y., and T. Feng. 2015. "The Mediating Role of LPFC–vmPFC Functional Connectivity in the Relation Between Regulatory Mode and Delay Discounting." *Behavioural Brain Research* 292: 252–258. <https://doi.org/10.1016/j.bbr.2015.06.035>.
- Gurzynski-Weiss, L., Ed. 2017. *Expanding Individual Difference Research in the Interaction Approach*. John Benjamins.
- Hedge, T. 1993. "Project Work." *ELT Journal* 47, no. 3: 275–277. <https://doi.org/10.1093/elt/47.3.276>.
- Herman, W. E. 1990. "Fear of Failure as a Distinctive Personality Trait Measure of Test Anxiety." *Journal of Research and Development in Education* 23: 180–185.
- Khajavy, G. H., B. Ghonsooly, A. Hosseini Fatemi, and C. W. Choi. 2016. "Willingness to Communicate in English: A Microsystem Model in the Iranian EFL Classroom Context." *TESOL Quarterly* 50, no. 1: 154–180. <https://doi.org/10.1002/tesq.204>.
- Kruglanski, A. W., E. Orehek, E. T. Higgins, A. Pierro, and I. Shalev. 2010. "Modes of Self-Regulation: Assessment and Locomotion as Independent Determinants in Goal Pursuit." In *Handbook of Personality and Self-Regulation*, edited by R. H. Hoyle, 1st ed., 375–402. Wiley. <https://doi.org/10.1002/9781444318111.ch17>.
- Kruglanski, A. W., A. Pierro, L. Mannetti, and T. E. Higgins. 2013. "The Distinct Psychologies of "Looking" and "Leaping": Assessment and Locomotion as the Springs of Action." *Social and Personality Psychology Compass* 7, no. 2: 79–92. <https://doi.org/10.1111/Spc3.12015>.
- Kruglanski, A. W., E. P. Thompson, T. E. Higgins, et al. 2000. "To "Do the Right Thing" or to "Just Do It": Locomotion and Assessment as Distinct Self-Regulatory Imperatives." *Journal of Personality and Social Psychology* 79, no. 5: 793–815. <https://doi.org/10.1037/0022-3514.79.5.793>.
- Loewen, S., and M. Sato. 2018. "Interaction and Instructed Second Language Acquisition." *Language Teaching* 51, no. 3: 285–329. <https://doi.org/10.1017/S0261444818000125>.
- Long, M. H. 1981. "Input, Interaction, and Second Language Acquisition." *Annals of the New York Academy of Sciences* 379, no. 1: 259–278. <https://doi.org/10.1111/J.1749-6632.1981.Tb42014.X>.
- Long, M. H. 1996. "The Role of the Linguistic Environment in Second Language Acquisition." In *Handbook of Second Language Acquisition*, edited by W. C. Ritchie and T. K. Bhatia, 413–468. Academic Press.
- Lyster, R., and L. Ranta. 1997. "Corrective Feedback and Learner Uptake: Negotiation of Form in Communicative Classrooms." *Studies in Second Language Acquisition* 19, no. 1: 37–66. <https://doi.org/10.1017/S0272263197001034>.
- Mackey, A. 1999. "Input, Interaction, and Second Language Development: An Empirical Study of Question Formation in ESL." *Studies in Second Language Acquisition* 21, no. 4: 557–587. <https://doi.org/10.1017/S0272263199004027>.
- Mackey, A., R. Abbuhl, and S. M. Gass. 2012. "Interactionist Approach." In *The Routledge Handbook of Second Language Acquisition*, edited by S. M. Gass and A. Mackey, 7–24. Routledge.
- Mahbodi, M., M. Papi, and D. Wolff. 2025. "How learners' trust in teachers shapes their feedback-seeking behaviors: A mixed-methods study." *Language Teaching Research* 0, no. 0.
- Ortega, L. 2007. "Meaningful L2 Practice in Foreign Language Classrooms: A Cognitive-interactionist SLA perspective." In *Practice in a Second Language*, edited by R. DeKeyser, 180–207. Cambridge University Press. <https://doi.org/10.1017/CBO9780511667275.011>.
- Papi, M. 2018. "Motivation as Quality: Regulatory Fit Effects on Incidental Vocabulary Learning." *Studies in Second Language Acquisition* 40, no. 4: 707–730. <https://doi.org/10.1017/S027226311700033X>.
- Papi, M., H. An, and K. Hirschi. 2026. "A Revised Model of Feedback-Seeking Behavior in SLA: Toward Improved Conceptualization and Measurement." *Applied Linguistics* amag055. <https://doi.org/10.1093/applin/amag055>.
- Papi, M., A. V. Bondarenko, B. Wawire, C. Jiang, and S. Zhou. 2020. "Feedback-Seeking Behavior in Second Language Writing: Motivational Mechanisms." *Reading and Writing* 33, no. 2: 485–505. <https://doi.org/10.1007/s11145-019-09971-6>.
- Papi, M., M. Eom, Y. Zhang, Y. Zhou, and Z. Whiteside. 2023. "Motivational Dispositions Predict Qualitative Differences in Oral Task Performance." *Studies in Second Language Acquisition* 45, no. 5: 1261–1286. <https://doi.org/10.1017/S0272263123000220>.
- Papi, M., and P. Hiver. 2025. "Proactive Language Learning Theory." *Language Learning* 75, no. 1: 295–329. <https://doi.org/10.1111/Lang.12644>.
- Papi, M., A. Rios, H. Pelt, and E. Ozdemir. 2019. "Feedback-Seeking Behavior in Language Learning: Basic Components and Motivational Antecedents." *Modern Language Journal* 103, no. 1: 205–226. <https://doi.org/10.1111/modl.12538>.
- Papi, M., and M. Sato. 2026. "Interaction-Seeking Behavior in Second Language Acquisition: Conceptualization and Operationalization." [Paper presentation]. American Association for Applied Linguistics Conference, Chicago, IL, United States.
- Papi, M., M. Sato, and M. Norouzi under review. Interaction-Seeking Behavior in Second Language Acquisition: Conceptualization and Operationalization, 1–52.
- Peng, J. 2019. "The Roles of Multimodal Pedagogic Effects and Classroom Environment in Willingness to Communicate in English." *System* 82: 161–173. <https://doi.org/10.1016/j.system.2019.04.006>.
- Pierro, A., S. Leder, L. Mannetti, E. T. Higgins, A. W. Kruglanski, and A. Aiello. 2008. "Regulatory Mode Effects on Counterfactual Thinking and Regret." *Journal of Experimental Social Psychology* 44, no. 2: 321–329. <https://doi.org/10.1016/j.jesp.2007.06.002>.
- Pierro, A., G. Pica, K. Klein, A. W. Kruglanski, and E. T. Higgins. 2013. "Looking Back or Moving On: How Regulatory Modes Affect Nostalgia." *Motivation and Emotion* 37, no. 4: 653–660. <https://doi.org/10.1007/S11031-013-9350-9>.
- Qian, Y., N. Kadivar, and M. Papi. 2026. "Exploring information-seeking behavior in second language learning: a preliminary study." *Innovation in Language Learning and Teaching* 1–22.
- Sato, M., and N. Storch. 2022. "Context Matters: Learner Beliefs and Interactional Behaviors in an EFL vs. ESL Context." *Language Teaching Research* 26, no. 5: 919–942. <https://doi.org/10.1177/1362168820923582>.
- Schmidt, R. W. 1983. "Interaction, Acculturation, and the Acquisition of Communicative Competence." In *Sociolinguistics and Language Acquisition*, edited by N. Wolfson and E. Judd, 137–174. Newbury House.
- Schmidt, R. W. 1993. "Consciousness, Learning and Interlanguage Pragmatics." In *Interlanguage Pragmatics*, edited by G. Kasper and S. Blum-Kulka, 21–42. Oxford University Press. <https://doi.org/10.1093/oso/9780195066029.003.0002>.
- Sippel, L. 2024. "Maximizing the Benefits of Peer Interaction: Form-Focused Instruction and Peer Feedback Training." *Language Teaching Research* 28, no. 2: 413–439. <https://doi.org/10.1177/13621688211004638>.
- Swain, M. 1995. "Three Functions of Output in Second Language Learning." In *Principle and Practice in Applied Linguistics: Studies in Honour of*

H. G. Widdowson, edited by G. Cook and B. Seidlhofer, 125–144. Oxford University Press.

Swain, M., and W. Suzuki. 2008. “Interaction, Output, and Communicative Language Learning.” In *The Handbook of Educational Linguistics*, edited by B. Spolsky and F. M. Hult, 557–570. Wiley-Blackwell. <https://doi.org/10.1002/9780470694138.Ch39>.

Tabari, M. A., and M. Farahanynia. 2026. “The Predictive Role of Motivational Orientations in L2 Writing Task Performance Across Proficiency Levels.” *Journal of Second Language Studies* 9, no. 1: 140–170. <https://doi.org/10.1075/jsls.00059.tab>.

Teimouri, Y. 2017. “L2 Selves, Emotions, and Motivated Behaviors.” *Studies in Second Language Acquisition* 39, no. 4: 681–709. <http://doi.org/10.1017/S0272263116000243>.

Teimouri, Y., M. Papi, and S. Tahmouresi. 2022. “Individual Differences in How Language Learners Pursue Goals: Regulatory Mode Perspective.” *Studies in Second Language Acquisition* 44, no. 3: 633–658. <http://doi.org/10.1017/S0272263121000413>.

Tsiplakides, I., and I. Fragoulis. 2009. “Project-Based Learning in the Teaching of English as a Foreign Language in Greek Primary Schools: From Theory to Practice.” *English language teaching* 2, no. 3: 113–119. <https://doi.org/10.5539/elt.v2n3p113>.

van Lier, L. 2014. *Interaction in the Language Curriculum: Awareness, Autonomy and Authenticity*. Routledge. <https://doi.org/10.4324/9781315843223>.

Wang, K., and Y. Zheng. 2026. “How and Why Writers Seek Feedback: A Scoping Review of Feedback-Seeking Behavior.” *Assessment & Evaluation in Higher Education* 1–17. <https://doi.org/10.1080/02602938.2026.2643351>.

Webster, D. M., and A. W. Kruglanski. 1994. “Individual Differences in Need for Cognitive Closure.” *Journal of Personality and Social Psychology* 67, no. 6: 1049–1062. <https://doi.org/10.1037/0022-3514.67.6.1049>.

Zhang, J., N. Beckmann, and J. F. Beckmann. 2023. “More Than Meets the Ear: Individual Differences in Trait and State Willingness to Communicate as Predictors of Language Learning Performance in a Chinese EFL Context.” *Language Teaching Research* 27, no. 3: 593–620. <https://doi.org/10.1177/1362168820951931>.

Ziegler, N., B. Issa, H. W. Bowden, and K. Moranski. 2026. “Metacognitive Instruction in Technology-Mediated TBLT: An Exploratory Study of Learners’ Engagement.” *System* 136: 103804. <https://doi.org/10.1016/j.system.2025.103804>.

Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Supporting information: [ijal70362-sup-0001-SuppMat.docx](#)