



Beyond Regulatory Fit: The Fit Condition and Learner Experience of Flow in L2 Learning

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Abstract

Humans possess a desire to advance and accomplish (promotion focus) and to maintain security (prevention focus). Higgins' (1997, 2000) regulatory fit theory proposed that the alignment between an individual's regulatory focus and goal-pursuit strategies enhances their motivation and performance. Given the mixed findings in L2 learning concerning this hypothesis, this study investigates the mediating role of learner experience in regulatory fit effects. Utilizing the concept of flow as a framework for positive learner experience, the study examines the relationship between regulatory focus (promotion or prevention) and flow and further explores whether regulatory fit affects learners' flow experience. Ninety university EFL students participated in activities designed to manipulate regulatory fit, and their flow experiences were assessed across three dimensions: intrinsic enjoyment, focused attention, and perceived control. Regression analyses were conducted to explore the relationships between regulatory focus, fit, and flow experiences. Findings indicated a positive correlation between promotion-focused regulatory orientation and all dimensions of flow, suggesting that learners with promotion focus experience greater enjoyment, attention, and perceived control in language learning tasks. However, contrary to expectations, regulatory fit did not significantly influence any dimension of flow. Findings are discussed in light of the applications of these concepts within L2 learning contexts.

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INTRODUCTION

Research in the field of individual differences has long sought to understand how learner variables influence the processes and outcomes of language learning. Motivation, anxiety, and personality characteristics have been widely studied topics in this realm for decades. Recently, this area of study has evolved to incorporate other psychological constructs in SLA, which include grit (Duckworth et al., 2007), flow (Csikszentmihalyi, 1990), and perseverance (Teimouri et al., 2022). These concepts have been introduced to more comprehensively explain the diverse processes and outcomes observed in L2 learning.

This line of inquiry has not only broadened the scope of research into individual differences in SLA but also introduced

diverse perspectives to reevaluate traditional constructs. For example, integrating regulatory fit theory (Higgins, 1997, 2000) from psychology into L2 motivation research has brought about changes in how motivation is viewed and treated in education (Cho, 2021; Papi, 2018). The regulatory fit theory posits that the alignment between an individual's regulatory focus (either promotion or prevention) and the strategy or means of achieving a goal leads to enhanced motivation and performance. Specifically, if an individual endorses values of advancement and accomplishment rather than security and maintenance, and actively pursues opportunities for gain instead of minimizing losses in goal pursuit, a state of fit is generated. This alignment is believed to subsequently boost the individual's motivation and performance. This perspective challenges the traditional view that certain learner traits are inherently facilitative to learning, as was commonly assumed in earlier research on individual differences (Papi, 2018). Although the proposal that the qualitative dimension of motivation should be examined along with its quantitative aspects was not new, Papi (2018) was one of the first scholars to empirically investigate the qualitative aspect of L2 motivation (Papi, 2018; Papi et al., 2019; Papi & Khajavy, 2021). His recent work emphasizes that researchers should pay attention to diverse human needs and desires in explaining L2 motivation. A promising approach, in this regard, is to empirically apply Higgins' regulatory fit theory to L2 learning, which hypothesizes that the congruence between an individual's regulatory focus and the means to achieve it becomes an important source of motivation and influences behaviors.

Grounded on empirical findings highlighting the positive impact of regulatory fit on various human activities (Cesario et al., 2008; Lockwood et al., 2002), L2 researchers have explored its roles in learning different aspects of L2. These include incidental vocabulary learning (Papi, 2018) and acquisition of lexical stress (Cho, 2021), as well as motivation (Han & McDonough, 2018). However, the results have been inconsistent, indicating that the relationship between regulatory fit and L2 learning may not be straightforward. Previous studies have proposed several reasons for the lack of a clear link between regulatory fit and L2 learning. It can be due to the complex nature of L2 learning where learner attention or motivation created in the fit condition does not directly influence learning outcomes but is mediated by cognitive processes (e.g., Cho, 2021).

Regulatory fit theory suggests that improved performance and motivated behaviors are the result of "feeling right" sensation it provides. In other words, the theory claims that when a fit occurs, individuals experience a sense of "rightness" about how they approach goals and what they do, which in turn facilitates behaviors and enhances performance. Thus, this feeling of rightfulness is the driving force acting as a mediator between regulatory fit and performance. However, existing L2 studies have not examined this mediating factor. A deeper understanding of the emotional and cognitive states involved in regulatory fit conditions would shed light on how regulatory fit enhances performance or language learning.

In this study, the relationship between regulatory fit and flow states is examined. Flow is characterized as an optimal experience for humans, encompassing both cognitive efficiency and emotional fulfillment. The study posits that the feeling of right in the regulatory fit somewhat parallels the experiences of flow, and for this reason, flow is used to understand learner experience in the regulatory fit state. Consequently, it hypothesizes that regulatory fit can foster positive learner experiences, like flow, which may subsequently influence language learning outcomes. To explore this, the present study examines how regulatory foci relate to learners' experience of flow, and it further investigates whether regulatory fit accounts for learners' flow experiences.

LITERATURE REVIEW

Regulatory Fit

Higgins' (1997) regulatory focus theory proposes that individuals have two distinct motivational orientations: promotion focus, which emphasizes aspirations, growth, and advancement, and prevention focus, which emphasizes safety, responsibility, and security. These orientations influence goal pursuit, decision-making, and behavior in various contexts, and thus have been widely studied in other fields such as organizational behavior and consumer psychology, but it has recently been addressed in L2 research. Regulatory focus is grounded on the idea that humans have diverse promotional and survival needs. Sometimes, human motivation is driven by values like safety, security, and maintenance, whose orientation is conceptualized as "prevention regulatory focus." Conversely, "promotion regulatory focus" is characterized by the pursuit of goals associated with values such as advancement, improvement, and accomplishment. Here, motivation is derived from aspirations for positive outcomes and growth. Higgins claimed that people have both types of regulatory foci, there is a tendency towards one over the other. This preference significantly affects how individuals approach goals and challenges. For instance, someone with a predominant prevention focus might be more cautious and risk-averse, while someone with a

promotion focus might be more inclined to embrace risks and seek opportunities for advancement. Understanding these orientations can provide insights into how different individuals are motivated and how this affects their learning processes.

Higgins (2000) expanded on his regulatory focus theory with the concept of regulatory fit, emphasizing the effectiveness of aligning one's goal orientation with appropriate strategies to achieve those goals. For example, a student striving for an "A" grade may experience regulatory fit when this goal is sustained by adopting eager strategies such as doing extra reading. Conversely, a non-fit scenario arises when the same goal is pursued through a vigilant strategy, such as meticulously ensuring all requirements are met. Regulatory fit is anticipated when the means of pursuing goals align with the individual's goal orientation, be it promotion or prevention.

There is ample evidence suggesting that regulatory fit influences various aspects of human life including engagement (Crowe & Higgins, 1997; Higgins, 2005), performance enhancement (Grimm et al., 2008; Maddox et al., 2006), and value experience (Higgins, 2014). For example, studies involving anagram tasks have shown that when participants' regulatory focus is consistent with the strategies they adopt, this fit leads to increased engagement, as evidenced by greater persistence and effort (Schwarz & Bohner, 2001). Furthermore, it has been demonstrated that regulatory fit intensifies the positive values associated with an experience, thus enhancing motivation and performance (Higgins, 2014).

Several L2 studies have endeavored to understand the role of regulatory fit within the context of L2 learning. These studies primarily explored how situationally constructed fit conditions facilitate L2 learning of various aspects. As an example, Papi (2018) created fit or non-fit situations by manipulating instructions in a task, which then led students to adopt either strategic or vigilant strategies. The impact of regulatory fit on students' vocabulary learning was then assessed. The results showed that regulatory fit enhanced incidental vocabulary learning, particularly in the context of fit where prevention and vigilant strategies coincide. Another study by Cho (2021), however, failed to show the benefits of regulatory fit in L2 learning of lexical stress.

While existing L2 studies yielded mixed results, empirical investigations as to how regulatory fit affects L2 learners' perception or task experience remain unexplored. Higgins (2000) posited that regulatory fit engenders a sense of "rightness" in an individual, yet the exact nature of this feeling is not fully understood. Higgins argued that this feeling fosters greater engagement, concentration, and interest in an activity, distinguishing it from mere pleasant experiences (Higgins, 2014, p. 86). Some studies suggested that "feeling right" can be transferred to moral values (Camacho et al., 2003). Higgins (2014) proposed that values are experienced not only through hedonic pleasure but also as a function of engagement. This perspective implies that regulatory fit is intertwined with individuals' emotional, motivational, and cognitive experiences. Given this, the concept of flow—an optimal, holistic experience characterized by immersion and enjoyment in an activity—becomes particularly relevant. The notion of flow could provide a valuable framework for understanding how regulatory fit contributes to enhanced performance.

Flow as L2 Learner Experience

Recent years have seen a burgeoning interest in the field of individual differences research, particularly focusing on positive psychology (Dewaele & MacIntyre, 2014; MacIntyre et al., 2016). While positive psychology and related emotions such as joy, interest, and contentment have been less emphasized in second language acquisition (SLA) research compared to negative emotions like anxiety and anger, there is a growing consensus about the critical role of positive psychology in fostering individual well-being and growth (Fredrickson, 2001). Positive emotions are not mere end states; they facilitate upward growth and are considered "markers of flourishing, or optimal well-being" (Fredrickson, 2001, p. 1). Furthermore, it can help reduce or deal with negative emotions that may arise in the process of learning (Dewaele & MacIntyre, 2014). This perspective underlines the importance of integrating positive psychology into SLA to enhance both emotional well-being and educational outcomes.

Flow is a concept that deserves attention from the perspective of positive psychology. According to Csikszentmihalyi (1990), flow represents a holistic emotional, cognitive and affective experience that is often referred to as a peak experience. This occurs when an individual is completely absorbed and engaged in an activity. During flow, people often lose track of time, become less self-aware, and find the activity deeply rewarding and enjoyable, experiencing a sense of cognitive efficiency and heightened focus. Csikszentmihalyi (1990) proposed that flow can enhance performance in that in a flow state, people are functionally efficient as flow itself implies cognitive efficiency and a focused mental state. Additionally, it can indirectly affect one's motivation, as a person who experienced flow would be motivated to work harder to re-experience such positive feelings. There is ample evidence that supports the beneficial effects of flow in enhancing one's performance in various contexts, including workplaces and school settings (Bassi & Delle Fave, 2004; Csikszentmihalyi & LeFevre, 1989; Lambert et al., 2013).

In L2 learning, a few studies examined the relationship between flow experiences and characteristics of L2 tasks (Cho, 2018, 2019; Egbert, 2003), primarily investigating whether flow can occur in L2 learning (Aubrey, 2017; Ibrahim, 2020; Schmidt & Savage, 1992). These studies showed that flow can occur in L2 learning. In particular, Ibrahim (2020) suggested flow to be understood in terms of intense and sustained engagement across a series of tasks, and he emphasized the importance of sustained flow in L2 learning. Although the notion of flow is a momentary experience, sustained flow can lead to positive cycles for growth. As such, the study of flow seems worthwhile along with the widely conceived importance of positive psychology in human life.

Considering the positive roles of flow in enhancing performance (Bassi & Delle Fave, 2004; Csikszentmihalyi & LeFevre, 1989; Lambert et al., 2013), it becomes apparent that the characteristics of flow and regulatory fit share similarities as they both represent positive human experiences during task engagement. These experiences encompass affective and cognitive dimensions, though the sources of these experiences differ. Regulatory fit arises when an individual's approach to achieving a goal aligns with their goal orientation, while flow experiences depend largely on the equilibrium between a learner's perception of a task's challenge level and their skill in tackling the task (Csikszentmihalyi, 1990). Moreover, although regulatory fit is a condition for positive outcomes, and flow is intrinsically a rewarding experience, both can lead to beneficial results such as enhanced performance and motivation. Nonetheless, it is unclear how they interrelate and influence each other.

The Present Study

The review of existing literature suggests the need to examine the role of regulatory fit in L2 motivation and language learning, conceptualizing learner motivation as quality (e.g., Papi, 2018). It also indicates that existing L2 research has delved into examining the potential fit effects on learner behaviors, such as learning outcomes. However, inconsistent findings, in contrast to the observed benefits of fit in other human activity domains (Grimm et al., 2008; Maddox et al., 2006), warrant further investigation into the link between regulatory fit and outcomes. It has been often pointed out that L2 learning is an outcome of the complex interplay between conditions and learner capacities which involve both cognitive and affective dimensions. This account precludes the idea that the absence of a direct relationship between regulatory fit and learning outcomes means the absence of fit effects. It suggests that regulatory fit effects should be investigated in conjunction with other mediating factors.

This study hypothesizes that learners' flow experience may mediate this relationship. Learner experience is considered a direct manifestation of regulatory fit, which subsequently affects learner performance and learning outcomes. Also, although regulatory fit and flow are conceptually similar in that both indicate a positive and optimal sense during a specific activity, differences exist. Regulatory fit has been operationalized from the interplay between learner traits and the environment in research (although much research equates this to a learner experience), flow is inherently subjective.

To gain a deeper understanding of regulatory fit from the learner's perspective and to elucidate the relationship between regulatory fit and learning outcomes, it is essential to explore the subjective experience that one may feel in the regulatory fit condition. Accordingly, this study investigates the relationships between regulatory fit and the flow experience. Additionally, it explores the intersection of regulatory focus and flow experiences. The research questions guiding this study are as follows:

RQ1. How is regulatory focus associated with students' experiences of flow during an L2 activity?

RQ2. How does regulatory fit affect students' experiences of flow in an L2 activity?

METHOD

Participants

The participants in the study were 90 Korean EFL students enrolled in a university in Seoul. They were freshmen majoring in social science and humanities and were taking communicative English courses designed to enhance oral communication skills. The participants were from four different classes taught by the same instructor. Based on the placement test administered by the university, students were placed into the high-beginner to low-intermediate level of the courses. They evaluated their language skills using a nine-point Likert scale, where one represented a low beginner level and nine indicated

high advanced proficiency. The self-assessment covered various language dimensions like reading, writing, speaking, listening, and pronunciation. The scores ranged from 3.2 in speaking to 4.81 in reading, which corresponds to the level designated by the university. Six students lived or studied abroad, but these were short-term, not exceeding six months, suggesting a limited impact on their language proficiency.

Manipulation of Regulatory Fit

In the classroom setting, students learned the characteristics of English speech by focusing on the rhythmic aspects, such as intonation, stress, and linking in connected speech. As a component of their class activities, the students listened to a speech by a famous figure and practiced mimicking the speaker's speaking styles while focusing on speech characteristics in English. This activity aimed to offer students opportunities to practice English speaking, focusing on the specific features they had previously learned. To achieve this objective, students were instructed to practice and mimic the speech patterns of a speaker as closely as the model speech. In order to maintain motivation, students were informed about a lottery for gift cards contingent on achieving the set goals, but two distinct framing conditions were created to manipulate regulatory fit.

In the gain condition, randomly assigned to two classes, students were informed that they started from zero and earned points for each sentence correctly mimicked. This approach aimed to encourage eager strategies, focusing on gains and advancement. The participants in the gain-framed condition were informed that obtaining 75 points would qualify them for entry into a drawing for a gift card. In contrast, the remaining two classes were in the loss condition, starting with 100 points and losing points for each misread sentence. This condition fostered vigilant strategies, emphasizing goal achievement and status quo maintenance. Loss-framed students were told that they were currently included in the lottery and would remain in it as long as they did not lose more than 25 points.

Such different framing conditions created fit or non-fit depending on each participant's trait regulatory focus. Promotion-oriented learners likely found the gain condition more motivating (fit), while prevention-oriented students might prefer the loss condition (fit). The activity, conducted individually with audio assistance, lasted 50 minutes.

Instruments

The participants' trait-like regulatory focus was measured by adopting Lockwood, Jordan, and Kunda's (2002) general regulatory focus measure (GRFM). A promotion focus reflects an inclination toward achieving success rather than maintaining the status quo or avoiding failure. Sample items related to this aspect include "I frequently imagine how I will achieve my hopes and aspirations." and "I typically focus on the success I hope to achieve in the future." ($n = 7$, Cronbach's alpha = .81). Conversely, a prevention focus indicates a general tendency to prevent loss rather than seek gains and accomplishments. Items representing this concept include "I am anxious that I will fall short of my responsibilities and obligations." and "I frequently think about how I can prevent failures in my life." ($n = 7$, Cronbach's alpha = .76). The questionnaire items were presented in a random order in the participants' native language, Korean. Regulatory focus scores for promotion and prevention were computed based on participants' average scores for each construct.

To measure participants' flow experiences, multiple dimensions of flow were assessed. It has been suggested that flow is a holistic peak experience that consists of multiple cognitive and emotional aspects. Following Csikszentmihalyi's (1990) description of flow, this study included seven dimensions of flow in the original survey: (a) the merge of actions and awareness, (b) clear goals, (c) concentration on task, (d) transformation of time, (e) sense of control, (f) loss of self-consciousness, and (g) autotelic experience (inherently enjoyment and reward). However, through a factor analysis, which helps identify underlying variables or factors by analyzing correlations among items, some overlapping items were removed. This analysis revealed three primary dimensions of flow: intrinsic interest, focused attention, and perceived control, aligning with findings from prior research (Cho, 2018, 2019; Egbert, 2003). Intrinsic interest refers to the level of enjoyment and intrinsic engagement in the activity (e.g., "The experience was rewarding."), and focused attention involves cognitive engagement with the activity (e.g., "My attention was focused entirely on what I was doing."). Perceived control pertains to a perceived sense of control over the activity (e.g., "I felt as though I had everything under control.") Based on the factor analysis, a composite score was created by averaging scores for each component and this score was used for further analysis in the study.

Analysis

The analysis consisted of two parts: the first part involves a preliminary analysis to ensure that instruments are valid and reliable, and the other part addresses the main research question. First, data reduction was performed to ensure that subcomponents of flow represent their respective components. Based on this, the effects of regulatory fit on flow experiences were examined using regression analyses. For the analysis involving regulatory fit, dummy coding was employed to deal with interactions between a continuous variable (i.e., regulatory focus) and a dichotomous variable (i.e., gain or loss condition) (Aiken & West, 1991; Tabachnick & Fidell, 2007). To examine the influence of framing effects in the gain scenario, the gain condition was set as the reference group, assigning the gain frame a value of zero, and the loss frame a value of one. In contrast, for analyzing the framing effects within the loss scenario, the loss condition was the reference group, with the loss frame assigned a zero value and the gain frame a value of one. The following illustrates the regression equation with gain frame as a reference group.

$$Y (\text{flow}) = \text{promotion focus} + \text{prevention focus} + \text{framing (gain = 0 vs. loss = 1)} + \text{promotion focus} \times \text{framing} + \text{prevention focus} \times \text{framing} + \text{attitudes towards pronunciation}$$

This formula delineates the extent to which each predictor variable contributes to the dependent variable of flow. The predictor variables were each regulatory focus, framing, their interaction, and attitudes towards pronunciation served as a covariate. Given the assumption that learners' flow is influenced by their genuine interest in pronunciation or speaking activities, learners' attitude towards pronunciation was included in the equation to control its potential impact.

RESULTS

Flow Experiences

To reduce the number of items and to validate whether items represent the respective constructs, a factor analysis was performed. The Principal Axis Factoring with Varimax rotation resulted in three-factor solutions as shown in Table 1.

TABLE 1
Factor Loading for Components of Flow Experience After Varimax Rotation

	Factor			Communalities
	1	2	3	
The experience left me feeling great.	0.90	0.13	0.27	0.90
I really enjoyed the experience.	0.84	0.19	0.25	0.81
The experience was rewarding.	0.71	0.35	0.30	0.72
I was motivated by the activity itself rather than by external factors like rewards.	0.51	0.30	0.17	0.38
I performed automatically, without having to think about it.	0.07	0.79	0.23	0.68
I did things spontaneously without having to think.	0.13	0.78	0.36	0.75
I had total concentration.	0.50	0.70	0.11	0.76
My attention was focused entirely on what I was doing.	0.25	0.63	0.09	0.47
I had no difficulty concentrating.	0.40	0.59	0.08	0.51
I felt as though I had everything under control.	0.28	0.23	0.81	0.79
I felt that I could control what I was doing.	0.34	0.23	0.77	0.77
Extraction Method: Principal Axis Factoring.	27.06	25.83	15.63	68.52

*Note. Highly loaded items are displayed in bold.

The first component pertains to positive and enjoyable emotions, which combines items on autotelic experience and interest, forming a factor that represents intrinsic interest (factor 1). The second component represents focused attention, which includes the merge of action and awareness along with concentration on the task (factor 2). The third factor indicates the perceived control over the task. The first factor accounts for 27.06% of the variance, followed by 23.71%, 15.73 by the second and the third factors, respectively. In total, the three factors explained 68.52% of the total variance. Moreover, the reliability of these items was examined, which yielded acceptable levels of reliability for each factor [factor 1 ($n = 4$) = .888; factor 2 ($n = 5$) = .872; factor 3 ($n = 2$) = .841]. Based on the factor structures, composite scores were created for each factor, and were used for further analysis.

RQ1. Regulatory Focus and Flow Experiences

The first research question explores how learners' regulatory focus and flow experiences are related. Table 2 shows descriptive statistics for variables per manipulation condition.

TABLE 2
Descriptive Statistics for Variables for Each Framing Condition

Framing Condition		Promotion focus	Prevention focus	Intrinsic interest	Focused attention	Perceived control	Attitudes towards pronunciation
Gain ($n = 44$)	<i>M</i>	6.8	6.0	5.9	6.8	5.4	6.2
	<i>SD</i>	1.15	1.44	1.47	1.20	1.76	1.36
Loss ($n = 46$)	<i>M</i>	6.86	6.00	6.42	6.56	5.60	6.13
	<i>SD</i>	1.15	1.51	1.25	1.23	1.66	1.47
Total ($n = 90$)	<i>M</i>	6.81	5.99	6.16	6.67	5.49	6.15
	<i>SD</i>	1.15	1.47	1.38	1.21	1.70	1.41

Across the gain and loss conditions, their promotion and prevention scores were generally similar. There appear to be subtle differences in terms of learner experiences across the two conditions, yet the differences do not seem salient.

Further, correlations were examined (Table 3). Promotion focus had positive correlations with all types of learner experiences, including intrinsic interest, focused attention, perceived control, and attitudes towards pronunciation ($p < .05$). However, prevention focus did not show significant correlations with any other variables examined ($p > .05$). Additionally, flow components of intrinsic interest, focused attention, and perceived control, and attitudes towards pronunciation were significantly related to each other ($p < .05$).

TABLE 3
Correlations Among Regulatory Focus, Flow Components, and Attitudes Towards Pronunciation

	Promotion focus	Prevention focus	Intrinsic interest	Focused attention	Perceived control	Attitude towards pronunciation
Prevention focus	0.09	1				
Intrinsic interest	.49*	0.20	1			
Focused attention	.39*	0.06	.58*	1		
Perceived control	.34*	0.11	.58*	.50*	1	
Attitude towards pronunciation	.30*	-0.03	.42*	.29*	0.19	1

* indicates $p < .05$

RQ2. Regulatory Fit Effects on Flow Experiences

To examine whether regulatory fit affects learner experience of flow, several regression analyses were performed. Dependent variables were three subcomponents of flow: a) intrinsic interest, b) focused attention, and c) perceived control. The interaction effects (e.g., fit effects) were examined twice, once with promotion as a reference group, and the other with prevention as a reference group.

First, when intrinsic interest was examined as a dependent variable, the regression model was found significant ($F(6, 82) = 8.67, p < .01$ for the gain frame; $F(6, 82) = 8.67, p < .01$ for the loss frame). The coefficients are summarized in Table 4.

TABLE 4
Regression Analysis for Regulatory Fit Effects on Intrinsic Interest

	Unstandardized coefficients		Std. Coefficients		95.0% Confidence Interval for B		
	B	Std. Error	Beta	<i>t</i>	Sig.	Lower Bound	Upper Bound
Gain Frame							
(Constant)	1.79	1.82		0.98	0.33	-1.84	1.79
Promotion focus	0.36	0.16	0.29	2.30	0.02	0.05	0.36
Prevention focus	0.20	0.13	0.22	1.60	0.11	-0.05	0.20
Condition	-2.22	1.71	-0.81	-1.30	0.20	-5.62	-2.22
Promotion X Frame	0.56	0.76	0.41	0.74	0.46	-0.95	0.56
Prevention X Frame	-0.33	0.54	-0.24	-0.62	0.54	-1.40	-0.33
Attitude towards pronunciation	0.30	0.09	0.30	3.32	0.00	0.12	0.30
Loss Frame							
(Constant)	-0.92			-0.55	0.58	-4.24	2.41
Promotion focus	0.52	0.16	0.42	3.18	0.00	0.19	0.84
Prevention focus	0.10	0.11	0.10	0.88	0.38	-0.12	0.32
Condition	2.22	1.71	0.81	1.30	0.20	-1.18	5.62
Promotion X Frame	-0.57	0.78	-0.41	-0.74	0.46	-2.12	0.97
Prevention X Frame	0.32	0.53	0.24	0.61	0.54	-0.73	1.38
Attitude towards pronunciation	0.30	0.09	0.30	3.32	0.00	0.12	0.48

Table 4 reveals that the promotion score was a significant predictor for intrinsic interest (standardized $B = .29, p = .02$ for the gain frame; standardized $B = .42, p = .002$ for the loss frame). In the gain frame condition, a one-unit increase in promotion scores led to a .29 increase in intrinsic interest. The study also found that learner interest in learning pronunciation also significantly contributed to enhancing intrinsic interest. However, the regulatory fit or non-fit did not have any influence on learners' intrinsic interest.

Next, the same type of analysis was performed only with focused attention as the dependent variable. This model was found significant [$F(6, 82) = 3.61, p < .01$ for the gain frame; $F(6, 82) = 3.60, p < .01$ for the loss frame]. Table 5 summarizes the regression coefficients for the condition as a reference group.

TABLE 5*Regression Analysis for Regulatory Fit Effects on Focused Attention (Gain as a Reference Group)*

	Unstandardized coefficients		Std. Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	<i>t</i>		Lower Bound	Upper Bound
(Constant)	1.79	1.82		0.98	0.33	-1.84	5.42
Promotion focus	0.36	0.16	0.29	2.30	0.02	0.05	0.67
Prevention focus	0.20	0.13	0.22	1.60	0.11	-0.05	0.45
Condition	-2.22	1.71	-0.81	-1.30	0.20	-5.62	1.17
Promotion X Frame	0.56	0.76	0.41	0.74	0.46	-0.95	2.08
Prevention X Frame	-0.33	0.54	-0.24	-0.62	0.54	-1.40	0.74
Attitude towards pronunciation	0.30	0.09	0.30	3.32	0.00	0.12	0.48

As Table 5 indicates, in the gain condition, the promotion score emerged as the only significant predictor within the model, but promotion score was the only significant predictor for the model, yet learner interest in pronunciation did not significantly explain variations in learners' focused attention. The interactions between regulatory focus and conditions (i.e., regulatory fit) did not affect learners' focused attention. Contrary to this, in the loss condition, although the overall model was acceptable, there were no predictor variables that significantly explained learners' focused attention to the activity ($p > .05$).

Lastly, the influences of the predictor variables on learners' perceived control over the activity were examined for the respective condition. In the gain condition, the overall model was significant [$F(6, 83) = 2.22, p < .05$], yet learners' perceived control was significantly predicted only by their promotion scores. The regression coefficients are summarized in Table 6. It reveals that a one-unit increase in promotion scores led to a .40 increase in the scores of perceived control (Standardized Beta = .40, $p = .03$). However, there were no fit effects on learners' perceived control. In the loss condition, while the regression model was statistically significant, none of the predictor variables significantly explained learners' perceived control in the activity ($p > .05$).

TABLE 6*Regression Analysis for Regulatory Fit Effects on Perceived Control (Gain as a Reference Group)*

	Unstandardized coefficients		Std. Coefficients		Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta	<i>t</i>		Lower Bound	Upper Bound
(Constant)	1.59	1.82		0.87	0.39	-2.04	5.22
Promotion focus	0.43	0.16	0.40	2.79	0.01	0.12	0.74
Prevention focus	0.13	0.13	0.16	1.02	0.31	-0.12	0.38
Condition	0.75	1.71	0.31	0.44	0.66	-2.65	4.14
Promotion X Frame	-0.72	0.76	-0.59	-0.94	0.35	-2.24	0.80
Prevention X Frame	-0.48	0.54	-0.40	-0.89	0.38	-1.55	0.59
Attitude towards pronunciation	0.16	0.09	0.19	1.81	0.07	-0.02	0.34

In summary, the study failed to demonstrate the hypothesized benefits of regulatory fit on L2 learner experience in any aspect of flow, including either intrinsic interest, focused attention, or perceived control. However, promotion focus and

learners' positive attitudes towards pronunciation can affect learner experiences in all aspects of flow.

DISCUSSION

The present study explored the relationship between regulatory fit conditions and L2 learner experience. Regulatory fit, a subjective experience when one's approach to a goal aligns with the means to achieve it, has been previously hypothesized to emerge when this condition is provided. However, the conditions in which the regulatory fit would possibly occur cannot grant the emergence of fit. Therefore, this study attempts to understand how situationally constructed fit conditions are related to learners' subjective task experience. To encapsulate learner experience, the study employed the concept of flow to capture both cognitive and affective experiences holistically (Cho, 2018). It specifically investigates how regulatory fit conditions predict flow experiences in terms of intrinsic interest, focused attention, and perceived control.

This study first investigated the relationship between regulatory focus (i.e., promotion focus and prevention focus) and flow experiences. The results indicated a positive correlation between promotion focus scores and flow dimensions such as intrinsic interest, focused attention, and perceived control. In contrast, prevention focus had no significant relationship. These findings appear to contrast previous research that indicated no relationship between a particular regulatory focus and academic performance education in general (Föster et al., 2003; Miele et al., 2009) as well as findings in L2 learning (Cho, 2021; Papi, 2018). It also diverges from the finding of the beneficial effects of prevention orientation in test performance (Rosenzweig & Miele, 2016). However, the findings align with research on regulatory focus and learner emotion, as shown by Jiang and Papi (2022). Jiang and Papi found that promotion focus reduced L2 anxiety, while prevention focus did not have any correlations with L2 anxiety. These current findings resonate with Jiang and Papi's finding in highlighting the more significant role of promotion focus over prevention focus in affecting L2 learners' emotions and broadly suggest a connection between regulatory focus and learner experience. Along with this, it should be also noted that the above significance was observed only in the analysis where the gain frame served as a reference group.

Another interesting finding of the study pertains to the conceptualization of learner experience through flow. Admittedly, although flow was adopted to address holistic learner experience as a conceptual framework, how flow is assessed in the present study is different from how flow was originally conceptualized—the peak experience characterized by cognitive efficiency, focused attention, and rewarding emotional states. Contrary to that, the present study revealed that these sub-dimensions of flow do not operate in unison, despite significant correlations among them ($p < .05$, $r > .50$). This divergence may be attributed to the treatment of flow as a continuous, rather than a discrete, concept in this study, aligning with the approach of many other studies (see Abuhamdeh, 2020 for a review). Specifically, since this study did not categorize students into distinct flow or non-flow states, participants may have varied experiences while performing the task. Some students might have found the task interesting but faced challenges in maintaining focus. However, if flow were operationalized as a discrete notion and individuals with high scores across all dimensions (indicating a flow state) were examined, the components of flow might exhibit more coherent patterns. Another explanation could be the complex nature of L2 learning. As argued by Egbert (2003), the components of L2 flow might differ slightly from how flow is conceptualized in other fields. In this sense, referring to L2 research, the current findings align with the examination and empirical observations of flow in other L2 research, as demonstrated by Egbert (2003) who identified challenge-skill balance, attention, interest, and control as constituents of L2 learner flow experience. Similarly, Cho (2018) illustrated that each component of flow may not necessarily work together in the L2 context. Although tentative, the current findings suggest that flow can be used as a framework for understanding an individual's cognitive and affective experiences with a task, rather than representing an ultimate peak flow experience in the context of L2 learning.

Turning to the research question of whether regulatory fit influences flow dimensions of learner experience (RQ2), the present study revealed that regulatory fit failed to account for any aspect of flow including intrinsic interest, focused attention, and perceived control. In other words, regulatory fit and flow experiences were unrelated to each other. This is somewhat unexpected as the present study assumed that the experience of “feeling right” which emerges from the regulatory fit condition somewhat aligns with the ultimate experience of the flow state. The findings also contradict previous studies that showed positive effects of regulatory fit on performers' experiences (Crowe & Higgins, 1997; Freitas & Higgins, 2002; Higgins, 2005, 2014). According to Freitas and Higgins (2002), individuals in the fit condition experienced not only heightened anticipation of enjoyment in forthcoming tasks but also greater enjoyment during the activity itself. Moreover, they also perceived greater success in their activities, irrespective of actual performance. Furthermore, their increased enjoyment levels influenced their motivation and willingness to re-engage in the task, a key element of flow. However, the present study's findings contradict these, as regulatory fit did not appear to affect learners' affective experience.

Nonetheless, it should be noted that previous studies typically involved short laboratory tasks, where a strong sense of fit was immediately induced. In contrast, this study's fit condition extended over 50 minutes, allowing for potential shifts in the learners' experiences of fit or non-fit due to challenges faced or varying personal interests. The extended task duration might have led learners to overlook or ignore the strategic means toward the goal, focusing more on the task itself. This could also be attributed to the nature of the classroom task, which prioritized learning from the activity, regardless of the guided strategies. It has been often noted that learning activity is inherently promotion-oriented. It is possible that inherent task characteristics might have affected how regulatory fit is created and worked, as task characteristics may naturally evoke certain regulatory focuses (i.e., a task requiring accuracy such as mimicking evoking vigilant strategies), even without external manipulation (Van Dijk & Kluger, 2011). Additionally, other task-related characteristics may play a role (e.g. Murray, 2013). For instance, inherent difficulties in performing a task in their L2 and varying levels of confidence and proficiency in the L2 could impact participants' engagement with the L2 task. Future research should explore how diverse task characteristics, such as task duration and the task's inherent goal, influence the sustained 'feeling right' sensation in regulatory fit states.

CONCLUSION

This study explored how regulatory focus is related to L2 learner experiences and to what extent regulatory fit contributes to students' flow experiences. The results revealed that although the regulatory focus can be related to the learning experience of flow, the regulatory fit was not related to the learner experience along the flow dimensions of intrinsic interest, focused attention, and perceived control.

The findings bear educational implications. The present study suggested that promotion focus is positively associated with learners' intrinsic interest, focused attention, and perceived control in the activity. This implies that educational practices emphasizing progress, advancement, and achievement can be more effective in motivating students and enhancing their engagement in language learning activities. The study's exploration of flow states in learning indicates the need for a broader understanding of student engagement. Educators should be aware of the multifaceted nature of learner experiences, incorporating both cognitive and emotional elements to facilitate optimal learning conditions.

Some limitations of the study should be acknowledged. First, the study's approach to dissecting flow into separate dimensions might not fully capture the essence of the holistic flow experience as conceptualized in positive psychology, even though the findings align with those of L2 flow research (Cho, 2018; Egbert, 2003). Similarly, previous studies indicated the need to capture the entire spectrum of flow concept, such as the merge of self-awareness and actions, loss of self-consciousness, and the distortion of time (Abuhamdeh, 2020; Cho, 2023), the present study represented major aspects of flow. Future research should explore methods to assess and foster flow in its entirety within the language learning context. As discussed above, the extended duration in the task might have influenced the emergence and sustainability of regulatory fit. Future studies should consider varying task types and durations to better understand their effects on regulatory fit and flow.

It is hoped that this study contributes to the growing body of literature on individual differences in SLA that brings new approaches such as quality of motivation (e.g., regulatory fit) and positive psychology (e.g., flow). The findings may provide valuable insights into understanding the interplay between motivational orientations, such as regulatory focus, and learner experiences, offering insights for more tailored and effective language education approaches. Future research could explore various learner characteristics and their interactions with diverse learner experiences in the context of L2 learning.

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