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Joint Growth Trajectories of Ideal L2 Writing Self, Enjoyment, and Anxiety as Predictors of L2 Writing Achievement: Linear vs. Curvilinear Growth Curve Modeling

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ABSTRACT

This study investigated the co-development of the ideal L2 writing self, writing enjoyment, and writing anxiety over time, as well as their predictive role in L2 writing achievement, using latent growth curve modeling (LGCM). A total of 145 EFL students in an IELTS writing course completed scales for these constructs across four one-month intervals. Polynomial LGCMs were applied to compare linear, piecewise, and quadratic growth models. Results revealed linear growth with increasing trends from T1 to T4 for the ideal L2 writing self and writing enjoyment, while writing anxiety followed a piecewise trajectory, with an initial decline (T1–T2) followed by stabilization (T2–T4). Significant covariances among the three constructs indicated their interconnected development over time. Initial levels of these factors were not predictive of L2 writing achievement, but their growth trajectories significantly predicted outcomes. These findings highlight the dynamic interplay of emotional and motivational factors in L2 writing development and underscore the importance of longitudinal research in capturing their evolving influence on L2 writing achievement.

Keywords: L2 writing ideal self; L2 writing enjoyment; L2 writing anxiety; L2 writing achievement; latent growth curve modeling

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Introduction

Success in L2 writing is influenced by various factors, including self-concept and the emotional experiences that L2 learners develop over time (Karim & Nassaji, 2013; Li et al., 2023, 2024; Li & Li, 2024; Papi, 2021; Papi et al., 2024; Shabani, 2018; Solhi et al., 2024). Defined as the aspect of an individual's ideal self-concept of their L2 abilities, the Ideal L2 self reflects how learners envision themselves as proficient L2 users in the future (Dörnyei, 2005). Notably, this construct has proven to be a significant predictor of both L2 writing processes and L2 writing emotions, impacting how learners approach and experience their writing tasks (Tahmouresi & Papi, 2021).

Emotional experiences are also crucial in shaping learners' achievements in L2 writing. Previous research indicates that negative emotions can hinder learners' cognitive abilities and focus, while positive ones are shown to improve cognitive flexibility and capacity. For instance, L2 enjoyment has been linked to increased Ideal L2 self, a growth mindset, grit, and overall success in mastering L2 writing (Kim & Pae, 2021; Li et al., 2023; Piniel & Csizér, 2014; Yu et al., 2022). Conversely, feelings of L2 anxiety have been observed to have adverse effects on both the process and the results of L2 writing tasks (Zhang, 1995; Shafiee Rad & Jafarpour, 2022; Papi et al., 2022). Research on anxiety in L2 writing has revealed that students with high levels of this negative emotion are more likely to procrastinate on their L2 writing assignments (Zhang & Zhang, 2022), experience dissatisfaction with their writing efforts (Li et al., 2023), refrain from conveying complex ideas in their writing (Güvendir & Uzun, 2023; Zhang & Zhang, 2024), exert less effort to improve their writing skills (Fathi et al., 2022), and consequently receive lower grades for their writing (Tahmouresi & Papi, 2021).

Assuming the interplay between L2 writing achievement, L2 emotions, and Ideal L2 self in L2 settings, based on the complex dynamic system theory (CDST), it is fully warranted to investigate these emotions within an interconnected framework over time (Larsen Freeman & Cameron, 2008; van Dijk et al., 2024). Examining the connections among L2 writing achievement, L2 writing emotions, and ideal L2 self longitudinally can offer deeper insights into their simultaneous development among EFL learners. To obtain more comprehensive and detailed data on the changes in L2 writing emotions and Ideal L2 self over time, the current study employed linear and curvilinear latent growth curve modeling (LGCM). This approach provides the flexibility to shift the focus towards the dynamic interaction among these variables over time and thus provides more accurate interpretations of the relationships among the various variables under consideration (Wickrama et al., 2021).

Literature review

L2 Writing Emotions

It is reasonable to assert that language anxiety has been the subject of extensive study in the realm of second language acquisition (SLA), likely as a result of its intense nature and widespread occurrence. Foreign language anxiety (FLA) is characterized as a sense of tension and apprehension specifically associated with language-related activities, including speaking, listening, reading, and writing (MacIntyre & Gardner 1994). In contrast, foreign language enjoyment (FLE) is defined as a complex dynamic emotion that encompasses various aspects of challenge and perceived competence, underscoring the natural drive for success in the face of difficult tasks (Dewaele & MacIntyre 2014). The growing research interest in FLE stems from its proven link to academic success and proficiency, as well as its inverse relationship with FLA (Derakhshan, 2022; Sadeghi & Pourbahram, 2024).

The connection between learners' L2 writing anxiety and their L2 writing achievement has yielded mixed results. For instance, Cheng (2004) carried out a study with freshman English majors in Taiwan, which demonstrated an inverse relationship between writing anxiety and performance on a timed English writing task. Conversely, Rahimi and Zhang (2019) investigated 60 adult EFL learners at an upper-intermediate level in Iran and identified an absence of significant correlation between different subdomains of writing anxiety and L2 writing achievement. This discrepancy underscores the potential variations in how anxiety affects different aspects of writing performance, particularly across diverse groups of learners.

Similarly, the link between L2 writing enjoyment and writing achievement is marked by contradictions. To illustrate, Zhao et al. (2023) explored the relationship between the L2 writing ideal self, enjoyment, use of writing strategies, and final L2 integrated writing (IW) performance among Chinese university EFL learners. Although enjoyment and ideal L2 writing self were associated with increased use of writing strategies, neither had a direct impact on IW performance. Yao et al. (2024) also explored the connection between L2 writing enjoyment and writing success among high school students in China, with a focus on gender differences. Their results showed no direct link between enjoyment and writing performance. Conversely, Li et al. (2023) reported a positive connection between L2 writing enjoyment and writing performance. In a study of 239 first-year English majors in China, they found that both ideal L1 and L2 writing selves positively influenced L2 writing enjoyment, which subsequently enhanced IW performance.

Tahmouresi and Papi's (2021) research revealed an inverse correlation between L2 writing anxiety and L2 writing achievement; however, it failed to establish a significant link between L2 writing enjoyment and L2 writing success. Furthermore, Zhu et al. (2024) offered a more intricate understanding of the interplay between these two emotions and writing by identifying distinct profiles of enjoyment and anxiety among Chinese students. Specifically, they showed that participants with moderate enjoyment and low anxiety performed best in a story continuation writing task.

One possible explanation for these inconsistencies is the failure to use domain-specific scales for measuring L2 writing emotions in most previous studies. The absence of skill-specific assessments for writing emotions hinders deeper investigations into how these emotions affect writing success (Li et al., 2023). Cheng (2004) addressed this gap by creating and validating a 22-item L2 Writing Anxiety Inventory specifically designed to gauge writing-related anxiety. More recently, Li et al. (2023) developed and validated tools to assess L2 writing enjoyment and boredom. Tests for reliability and validity confirmed strong psychometric properties of both scales. Additionally, regression analyses demonstrated that enjoyment had a significant positive impact on writing achievement, while the effects of anxiety on writing achievement were found to be insignificant.

The conflicting findings across these studies indicate that the association among L2 writing anxiety, enjoyment, and achievement is complex and not easily defined. This underscores the need for further longitudinal research to clarify the dynamic nature of these relationships over time.

Ideal L2 Writing Self

The concept of ideal L2 self is described as the aspect of an individuals' ideal self that specifically relates to their L2 abilities and involves how learners envision themselves as skilled L2 users in the future (Dörnyei, 2005). Initially introduced by Dörnyei (2005) in the context of SLA, the ideal L2 self is a key element of L2 motivational self-system (L2MSS), which is rooted in the theoretical frameworks of possible selves (Henry, 2020) and self-discrepancy theory (Higgins, 1987). Alongside the ideal L2 self, the L2MSS includes two other elements: the ought-to L2 self and L2

learning experience. The ought-to L2 self reflects the characteristics that, in the eyes of significant others, individuals should possess in order to fulfill responsibilities and prevent undesirable outcomes, whereas the L2 learning experience pertains to the contextual and practical factors that motivate learners within their immediate educational environment, such as the influence of teachers, the curriculum, peer interactions, and experiences of success (Dörnyei, 2009). Within the L2MSS framework, the ideal L2 self plays a crucial role in shaping motivating intentional L2 learning behaviors (Dörnyei, 2009). The construct has been identified as a robust predictor of L2 writing process and L2 writing emotions (e.g., Tahmouresi & Papi, 2021). Consequently, this study concentrates on investigating the anticipatory influence of the ideal L2 self on students' emotional experiences, both positive and negative, along with their L2 writing performance.

In L2 writing, several research endeavors have delved into the exploration of learners' L2 motivation by examining the concept of ideal L2 self. Tahmouresi and Papi (2021) explored the connections among future selves, enjoyment, motivation, and achievement in L2 writing, using data collected from 85 Iranian EFL university students studying English. The results indicated that the ideal L2 writing self served as a positive predictor of all variables, encompassing enjoyment, anxiety, and achievement, whereas the ought-to L2 self positively predicted all variables except enjoyment. Similarly, Yao et al. (2024) studied the connections between growth mindsets, the ideal L2 writing self, L2 writing enjoyment, and their influence on English writing performance among high school students in China. The results revealed positive correlations among these factors between males and females. However, regarding the impact on L2 writing performance, the ideal L2 writing self emerged as a significant predictor solely in the case of female learners.

Li et al. (2023) explored the association between ideal L1 and L2 writing selves and their potential influence on L2 writing enjoyment and task performance. The results of path analysis revealed a transfer link between ideal L1 and L2 writing selves, along with positive correlations with L2 writing enjoyment and performance. The results imply that a longitudinal examination of the ideal self in L2 writing could provide valuable theoretical insights into emotions such as L2 writing anxiety and enjoyment, as well as L2 writing achievement.

Current Study

Recently, increasing attention has been given to investigating the interconnectedness among the ideal L2 self, emotions, and their impact on L2 writing achievement (Li et al., 2023, 2024; Li & Li, 2024; Papi, 2021; Papi et al., 2024; Solhi et al., 2024; Tahmouresi & Papi, 2021). However, there remains a noticeable gap in research that examines the relationships between the ideal L2 self and emotions, alongside their impact on L2 writing achievement, utilizing valid and domain-specific scales. Given the gradual evolution of emotions within the dynamic context of the L2 classroom, it is imperative to assess these factors longitudinally with appropriate methodologies.

One such methodological approach is LGCM, which tracks the temporal trajectories of emotions as they unfold within the authentic classroom environment across multiple stages of data collection. LGCM combines the attributes of nomothetic and idiographic methodologies, enabling investigators to harness both to elucidate applied linguistics data (Curran & Willoughby, 2003). This technique allows for the depiction of a distinct trajectory for each case, an average trajectory across all cases, and the variability around this average (Hiver & Al-Hoorie, 2019).

LGCM was selected to align with four objectives in our research. First, we aimed to characterize the shapes of change in L2 writing emotions (enjoyment and anxiety) and motivation (ideal L2 self) by comparing polynomial models like linear, quadratic, and piecewise LGCM. Second, we sought to determine the trend of changes (decreasing or increasing) by comparing the starting

point (intercept) and rate of change (slope) for all participants across three latent constructs: enjoyment, anxiety, and ideal L2 self. Additionally, we explored the simultaneous development of these variables throughout time in an L2 writing task. Finally, we investigated how L2 writing achievement is predicted by the starting points and changes in L2 writing enjoyment, anxiety, and ideal L2 self. The study specifically addresses three research questions (RQs):

RQ1: What are the shapes of L2 writing ideal self, enjoyment, and anxiety trajectories?

RQ2: How do L2 writing ideal self, enjoyment, and anxiety co-develop during an L2 writing course?

RQ3: How can L2 writing ideal self, enjoyment, and anxiety trajectories predict L2 writing achievement?

Methods

Background to LGCM

Conventional analytical techniques such as regression analysis, mean comparisons, and repeated-measures ANOVA have been extensively employed to explore changes in human behaviors and traits. The emergence of structural equation modeling (SEM) gave rise to novel approaches in longitudinal modeling that exhibit greater sensitivity towards both inter- and intra-individual variation (Wickrama et al., 2021). LGCM is a method employed to track and evaluate changes in various attributes, such as personal characteristics, behaviors, emotions, and educational outcomes, over a span of time.

LGCM provides substantial methodological benefits compared to conventional regression and mean comparison techniques when analyzing panel data. LGCM's dynamic approach views repeated measures as a part of a continuous process over time rather than fixed states at two distinct points. Furthermore, LGCM techniques excel in examining changes that exhibit non-linear trajectories (Wickrama et al., 2021). These techniques also offer researchers a broader scope of research questions related to individual development (Elahi Shirvan & Taherian, 2018). In contrast to conventional analysis techniques, LGCM enables a deeper understanding of the dynamic connections among different time-dependent cognitive, affective, and motivational factors. Recent studies on emotional dynamics in SLA and the possible correlations between positive and negative emotional trajectories (Dewaele & Dewaele, 2020; Elahi Shirvan et al., 2021; Kruk et al., 2022; Taherian et al., 2024) have led us to hypothesize that an increase in L2 learners' enjoyment of L2 writing is linked to changes in their anxiety levels during an L2 writing course.

The initial crucial step in any growth model is to identify the most appropriate functional structure for the trajectory over time. This refers to how repeated measures change as time progresses, or the shape of the trajectories. Choosing an incorrect functional form as a basis of the initial growth model can lead to biased outcomes when adding complexities such as growth predictors or multiple group analyses. A basic form of growth is a random intercept-only model, which assumes no change over time. The model that only includes intercepts can be further expanded in multiple ways, including a linear LGCM that follows a straight-line path, a curvilinear LGCM that follows a quadratic curve, and piecewise linear modeling that combines two or more linear trajectories to describe the changes in LGCM accurately.

Participants

We recruited 145 EFL students from four private language institutes in Iran for this research. The students selected for this study were chosen from those enrolled in IELTS writing courses due to their substantial experience and motivation in English writing, making them well suited to successfully complete the required writing tasks for the study. Participants comprised 79 females and 66 males, with ages spanning from 18 to 38 years (M = 28.44, SD = 10.55). The English proficiency levels of the participants, as measured by the Oxford Placement Test, varied from intermediate to upper-intermediate.

Instrumentation

The primary questionnaire utilized in this study was structured into two distinct sections. The first section contained 27 items, which comprised three specific subscales designed to assess key variables in the study: learners' ideal L2 self, L2 writing enjoyment, and L2 writing anxiety. Each of these constructs was measured using a six-point Likert scale, with response options ranging from 1 (strongly disagree) to 6 (strongly agree). The items in this section were presented in a randomized order to avoid response bias. The second section of the questionnaire was dedicated to gathering demographic information relevant to the study, such as participants' age, gender, language proficiency, and grades in their writing course. Below is a thorough explanation of the scales included in the questionnaire as well as the measure of L2 writing attainment.

L2 Writing Ideal Self. To assess participants' future L2 writing ideal self, we utilized Tahmouresi and Papi's (2020) questionnaire on L2 writing selves. This tool offers a rigorous and context-specific approach to questionnaire design, accounting for diverse interpretations of goals in L2 writing (Tahmouresi & Papi, 2020). The ideal L2 writer scale consisted of six items, one of which was: *I imagine a day when I am easily writing emails in English*. The internal consistency of the L2 writing ideal-self scale was high in this study (Cronbach's a = .88).

L2 Writing Enjoyment. To measure students' enjoyment in L2 writing, the foreign language writing enjoyment scale (Li et al., 2023) was employed. This scale evaluates both individual and social aspects of enjoyment in L2 writing, with six items focusing on private writing enjoyment and three items on social writing enjoyment (e.g., *I enjoy putting what I have learned into English writing.*). The scale demonstrated satisfactory reliability and validity in this study (Cronbach's α = .88).

L2 Writing Anxiety. Cheng's (2017) L2 writing anxiety inventory was utilized to assess students' anxiety levels in L2 writing. This inventory consists of 12 items, such as *When writing in English, I often worry that I will make language mistakes*. The scale's validity and reliability were confirmed in this study (Cronbach's a = .86).

L2 Writing Achievement. Students' L2 writing achievement was estimated based on their performance in a IELTS writing course. At the conclusion of the questionnaire, students were asked to report their grades for the writing course. These grades were calculated from their midterm and final essay scores throughout the writing course, which were assessed holistically by instructors using institutional rubrics.

Data Collection

Data collection was carried out using a questionnaire that focused on L2 writing ideal self, L2 writing enjoyment, L2 writing anxiety, and demographic information including learners' grades in their writing course. Previous research indicates that both enjoyment and anxiety fluctuate at micro (daily) and macro (weekly and monthly) levels (e.g., Elahi Shirvan et al., 2020, 2021; Shirvan & Taherian, 2018; Taherian et al., 2021). Therefore, the scales were administered during four distinct measurement occasions, each separated by one-month interval. Given the duration of the language course, it is reasonable to assume that the one-month gaps between data collection points could capture the causal lag in an L2 writing course. This procedure facilitated the tracking of variations in the target variables over time and enabled the assessment of the pace of change at different stages, while also accommodating individual differences.

The process of data collection started with the beginning of the course, utilizing an online questionnaire accessible throughout the data gathering period. Questionnaire were completed gradually during class sessions, ensuring participant confidentiality and obtaining informed consent. To accurately match data collected at four different measurement points, unique numbers linked to each student's ID number were assigned. Participants were required to use these unique numbers at each instance of data collection. The students gave their informed consent to participate in the study and were notified that they could withdraw from it at any point.

Data Analysis

Before conducting the statistical analysis, a normality test was performed on all three variables. Skewness and kurtosis estimates were used to verify the variables' normal distribution. The skewness and kurtosis values were within the -1.96 to 1.96 range, confirming the normal distribution of the data (Collier, 2020). Next, an examination of the assumptions regarding the feasibility of employing LGCM in the research was carried out. Subsequently, LGCM was utilized to test the proposed hypothetical model, which explored the relationships between the initial and growth levels of L2 writing ideal self, L2 writing enjoyment, and L2 writing anxiety using multi-wave data (Wickrama et al., 2021). This analysis aimed to investigate the shape (linear vs. nonlinear) and trend (decreasing and increasing) of the trajectories of the three variables at both intra- and inter-individual levels on the four measurement occasions, as well as the dynamic interplay among the variables. Additionally, the study investigated the effect of the covariate, L2 writing achievement, on the intercepts and slopes of L2 writing enjoyment, anxiety, and L2 writing ideal self.

Data analysis was conducting using LGCM in Mplus 7.4. (Muthen & Muthen, 2017). To evaluate the model fit, goodness-of-fit indices were employed, including the comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The acceptance criteria of these indices were as follows: CFI and TLI $\geqslant$ .90 and $\geqslant$ .95, and RMSEA and SRMR $\leqslant$ .08 and $\leqslant$ .05, indicating adequate and excellent fit indices, respectively (Hu & Bentler, 1999).

Results

Descriptive Results

To assess the feasibility of estimating growth curves (i.e., model identification), an initial analysis was conducted on the longitudinal covariance structures of the observed variables, as shown in Table 1. The examination of the correlation matrix presented in Table 1 revealed that the correlation coefficients between adjacent occasions (T-1 and T) for each factor were higher than those between non-adjacent occasions (e.g., L2 writing ideal self *rs* ranged from 0.16 to 0.39; writing enjoyment *rs* ranged from 0.18 to 0.33; writing L2 anxiety *rs* ranged from 0.15 to 0.30). Importantly, the off-diagonal correlations of the same repeated measure exhibited significant differences over time across the three constructs, suggesting potential presence of significant slope variations in each factor's growth model. Additionally, the results indicated that L2 writing ideal self, enjoyment, and anxiety exhibited the expected relationships with writing achievement: Ideal L2 self and enjoyment displayed positive correlations with L2 writing achievement, whereas anxiety exhibited a negative correlation with L2 writing achievement.

Table 1
Correlation Coefficients Matrix

	1	2	3	4	5	6	7	8	9	10	11	12
Ideal1	-											
Ideal 2	.31**	-										
Ideal 3	.23**	.37**	-									
Ideal 4	.16**	.18**	.39**	-								
ENJ1	.35**	.21**	.18**	.10**	-							
ENJ2	.18**	.41**	.19**	.12**	.27**	-						
ENJ3	.16**	.18**	.38**	.13**	.21**	.31**	-					
ENJ4	.09**	.12**	.15**	.34**	.18**	.20**	.33**	-				
ANX1	-.28**	-.21**	-.16**	-.14**	-.33**	-.21**	-.18**	-.15**	-			
ANX2	-.16**	-.31**	-.19**	-.14**	-.37**	-.18**	-.11**	-.09**	.23**	-		
ANX3	-.13**	-.14**	-.31**	-.11**	-.14**	-.34**	-.19**	-.10**	.17**	.29**	-	
ANX4	-.11**	-.09**	-.21**	-.34**	-.18**	-.21**	-.31**	-.17**	.15**	.16**	.30**	-
ACH	.48**	.49**	.49**	.50**	.43**	.44**	.46**	.46**	-.39**	-.38**	-.31**	-.31**

Shape of Latent Growth

Three distinct models were used to estimate LGCMs for L2 writing ideal self, L2 writing enjoyment, and L2 writing anxiety, examining different polynomial models for each factor (i.e., linear, quadratic, and piecewise linear, see Table 2). Following this, a final conditional model was developed, integrating the latent trajectories of Ideal L2 self, L2 writing enjoyment, and L2 writing anxiety into a unified parallel LGCM, using these trajectories as predictors for writing achievement. The initial comparison baseline was an intercept model (no-change model), serving as the simplest mean structure. Additional models introduced slope functions (e.g., linear, quadratic, piecewise linear) to assess model fit. Using a significant chi-square difference test ($\chi 2$) and changes in CFI of 0.010 or higher (Chen, 2007) for nested models, it was determined that one model exhibited superior fit compared to the others. For non-nested models (i.e., piecewise

models) where growth patterns may vary at specific timepoints, the decision was based on a decrease in Akaike Information Criterion (AIC) values (Brown, 2015).

Table 2
Model Fit Indices for Alternative Models

Models	Fit indices								
Ideal L2 self	χ^2	*df*	*CFI*	*TLI*	*RMSEA*	*AIC*	$\Delta\chi^2$	*p*	Δ*CFI*
Intercept only	204.472	21	.763	.752	.085	24608	-	-	-
Linear	51.374	18	.975	.969	.051	24377	153.395	.000	.213
Quadradic (vs. linear)	61.281	17	.977	.953	.050	24381	9.907	.815	.002
Piecewise (vs. linear)	63.749	18	.978	.955	.050	24389	12.375	.443	.003
Enjoyment									
Intercept only	338.333	48	.785	.751	.091	27846	-	-	-
Linear	128.547	45	.959	.936	.041	27514	209.786	.000	.174
Quadradic (vs. linear)	137.664	77	.964	.945	.039	27518	9.117	.733	.005
Piecewise (vs. linear)	149.373	45	.963	.943	.038	27512	21.826	.367	.004
Anxiety									
Intercept only	704.941	64	.783	.746	.088	82173	-	-	-
Linear	301.188	61	.925	.905	.034	82072	403.753	.000	.142
Quadradic (vs. linear)	289.365	60	.927	.915	.032	82069	11.823	.586	.002
Piecewise (vs. linear)	170.841	61	.952	.946	.032	82068	130.347	.000	.025

Regarding L2 writing enjoyment and L2 writing anxiety, we compared the no-change, linear, quadratic, and piecewise models. The quadratic and piecewise models did not result in a significant improvement in fit, as indicated by a *p*-value greater than 0.05 and a change in ΔCFI of less than 0.01. This finding supports the idea that enjoyment and ideal L2 self increase linearly over time. The shape of anxiety fluctuations, however, was more complex. Anxiety levels appeared to decrease during the initial two measurements (from the beginning [T1] to the end of the first month [T2] of language instruction) and then stabilized until the end of the semester (T4). The linear growth pattern of anxiety showed a significant improvement compared to the baseline intercept model, but adding quadratic and cubic terms did not enhance the model fit (see Table 2). Given that the raw means at T2, T3, and T4 were equal, a piecewise model was applied to maintain zero growth from T2 to T4, which resulted in an improved AIC fit. Therefore, anxiety exhibited linear growth only between T1 and T2, as shown in Figure 1. After T2, anxiety levels plateaued, remaining stable until the end of the semester (between T2 and T4).

Parallel LGCM: Direction of the Change and Heterogeneity

A parallel LGCM of Ideal L2 self, enjoyment, and anxiety, demonstrated a satisfactory fit ($\chi 2$ = 1428.481, df = 496, CFI = 0.96, TLI = 0.95, RMSEA = 0.03). The results, as shown in Table 3 and Figure 1, indicate that the mean intercept (I) values for Ideal L2 self (M = 1.426, p < .001), enjoyment (M = 1.674, p < .001), and anxiety (M = 2.019, p < .00) were statistically significant. Additionally, the mean trajectory for ideal self (M = 0.023, p < .001) and enjoyment (M = 0.29, p < .001) exhibited an increase over time, while anxiety (M = -0.27, p < .001) showed a decrease.

Furthermore, the variances of the intercepts and slopes for ideal L2 self (0.159, p < .001 and 0.005, p < .001, respectively), enjoyment (0.129, p < .001 and 0.007, p < .001, respectively), and anxiety (0.121, p < .001 and 0.011, p < .001, respectively) were significant. The significant intercept variances suggest that some L2 learners begin with higher levels of enjoyment, ideal L2 self, and/or anxiety, while others start with lower levels, and still others begin with levels close to the mean. Similarly, the significant slope variances indicate that some L2 learners experience a greater rate of change in enjoyment, ideal L2 self, and/or anxiety over time, while others exhibit a lower rate of change, and some maintain consistent levels of these variables across time.

Table 3
Intercept and Slope Mean and Variance for Parallel LGCM

	Mean		Variance	
	Intercept	Slope	Intercept	Slope
Ideal L2 self	1.426***	.023***	.159***	.005***
Enjoyment	1.674***	.029***	.129***	.007***
Anxiety	2.019***	-.027***	.121***	.011***

Predictive Power of the Initial States and Inter-construct Associations

The results showed in Table 4 and Figure 1 indicate a negative covariance between the intercept and slope for ideal L2 self (-0.654, p < .001); enjoyment (-0.512, p < .001), and anxiety (-0.506, p < .001). This negative covariance suggests that lower initial scores in learners' L2 writing enjoyment and Ideal L2 self corresponded to a more pronounced increase over time. Conversely, higher initial levels of L2 writing ideal self and enjoyment displayed less changes over time. Similarly, the negative covariance between the intercept and slope for anxiety indicates that higher initial anxiety scores led to a more significant decrease from T1 to T2.

The inter-construct relationships were also examined. Higher initial levels of ideal L2 self were positively correlated with initial anxiety levels (r = 0.403, p < .001). Additionally, the relationship between the slopes of ideal L2 self and enjoyment was positive (r = 0.437, p < .001). Conversely, higher initial levels of ideal L2 self were associated with lower initial anxiety levels (r = -0.312, p < .001), and there was a negative correlation between the slopes of ideal L2 self and anxiety (r = -0.314, p < .001). Furthermore, higher initial levels of enjoyment were linked to lower initial anxiety levels (r = -0.569, p < .001), with a negative correlation between the slopes of enjoyment and anxiety (r = -0.522, p < .001). Notably, no significant relationship was found between the cross-construct slope and the initial levels of ideal L2 self, enjoyment, or anxiety.

Table 4
Inter-construct correlations for parallel LGCM

	I- Ideal	S- Ideal	I-ENJ	S-ENJ	I-ANX	S1-ANX	S2-ANX
I-Ideal	-						
S- Ideal	-.654***	-					
I-ENJ	.403***	.114	-				
S-ENJ	.128	.437***	-.512***	-			
I-ANX	-.312***	-.137	-.569***	.131	-		
S1-ANX	-.111	-.314***	-.104	-.522***	-.506***	-	
S2-ANX	-.094	-.164	-.082	-.037	-.196	-.177	-

Conditional LGCM

In the conditional LGCM, the effects of L2 writing achievement were examined as outcomes of the intercepts and slopes of ideal L2 writing self, L2 writing enjoyment, and L2 writing anxiety. The model demonstrated satisfactory fit indices ($\chi 2$ = 612.51, df = 385, CFI = 0.96, TLI = 0.95, RMSEA = 0.02). Upon interpreting the coefficients, we found that L2 writing achievement was positively influenced by the slope of ideal self (β= 0.484, $p < .001$) and enjoyment (β= 0.322, $p < .001$), while the slope of anxiety was a negative predictor of L2 writing achievement (β= -0.294, $p < .001$). In essence, L2 learners who experienced a more pronounced increase in L2 writing enjoyment and ideal self exhibited higher levels of achievement in L2 writing compared to those with less pronounced changes in these factors. Conversely, the inverse relationship between L2 writing achievement and the slope L2 writing anxiety (T1 to T2) suggested that learners who showed a more rapid decrease in anxiety achieved higher scores in L2 writing compared to those with a less pronounced decrease in anxiety.

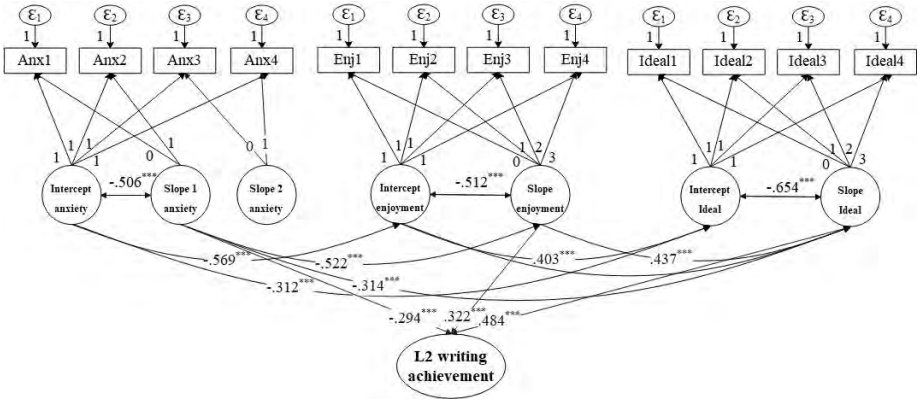

Figure 1. Conditional LGCM

Discussion

This section focuses on the discussion of the three research questions that informed the present study.

RQ1. What are the shapes of L2 writing ideal self, enjoyment, and anxiety trajectories?

Regarding the trajectories of L2 writing enjoyment and the ideal L2 self, the findings suggest that both demonstrated relatively linear growth over time. This indicates that as students progress in their L2 writing journey, their enjoyment of writing and their idealized perception of themselves as proficient L2 writers are gradually and consistently enhanced. This positive linear progression aligns with the results of earlier research showing how the ideal L2 self shapes linguistic attitudes and drives intentional learning behaviors (Dörnyei, 2005, 2009). Moreover, the constant rise in enjoyment is consistent with studies indicating that L2 writing enjoyment can enhance the L2 writing process and emotional engagement (Li et al., 2023).

The trajectory of L2 writing anxiety, on the other hand, revealed a more complex pattern. The initial decline in anxiety during the early phases of language instruction (from the beginning to the end of the first month), followed by a stabilization, suggests that the initial stage of the L2 writing course may be critical for managing anxiety. The plateauing in anxiety from the second month until the end of the semester implies that once a certain level of comfort or familiarity with the writing tasks is reached, a further decrease in anxiety may become more challenging. This could explain the lack of significant improvements in writing performance related to anxiety beyond the initial phase, as reflected in the study's findings.

The distinct paths observed for enjoyment, ideal self, and anxiety offer a more nuanced understanding of the L2 learning process. The linear growth of enjoyment and ideal L2 self suggests that these factors may be sustained and even strengthened over time, potentially leading to positive long-term effects on L2 writing development (Dörnyei, 2009a; Li et al., 2023). Conversely, the stabilization of anxiety implies that after an initial decrease, maintaining or further reducing anxiety may necessitate targeted interventions, such as increased support or adjustments in instructional strategies.

RQ2. How do L2 writing ideal self, enjoyment, and anxiety co-develop during an L2 writing course?

The examination of how the L2 writing ideal self, enjoyment, and anxiety co-develop throughout an L2 writing course helped us uncover interconnected dynamics that emphasize the complex associations among these constructs. The research findings demonstrate significant covariances among the L2 writing ideal self, enjoyment, and anxiety, suggesting that these factors are interconnected and evolve together during the course. Specifically, the negative covariance identified between the initial levels and changes over time of the ideal L2 writing self, L2 writing enjoyment, and L2 writing anxiety suggests that the starting points of these constructs significantly impact their developmental trajectories. This is consistent with prior research, such as the study conducted by Tahmouresi and Papi (2021), which identified the ideal L2 self as a key predictor of enjoyment, anxiety, and success in L2 writing. The consistency of these findings across various studies reinforces the notion that the ideal self plays a critical role in the advancement of L2 writing, affecting both emotional and motivational outcomes.

Furthermore, the negative covariance between the starting point and rate of change for each construct—ideal L2 self, enjoyment, and anxiety—suggests that individuals who begin with lower levels of L2 writing ideal self and enjoyment tend to experience greater improvements in these

variables over time. Conversely, those with higher initial levels display fewer changes. This trend indicates that learners with a modest initial ideal L2 self and enjoyment may have more potential for development, possibly due to the initial challenges they face, which could lead to increased effort and consequent progress. This aligns with the findings of Yao et al. (2024), who observed that the ideal L2 writing self has a significant impact on L2 writing performance.

Similarly, the negative covariance between the starting point and rate of change for anxiety suggests that students who begin the course with higher anxiety levels tend to experience a more significant decrease in anxiety over time. This reduction may be due to increased familiarity with the writing process, the development of better coping strategies, or a growing sense of proficiency as the course progresses. The link between initial anxiety levels and their decline over time underscores the dynamic nature of anxiety in L2 writing, indicating that it is not a fixed trait but one that can be alleviated through experience and confidence-building, as supported by the literature (e.g., Tahmouresi & Papi, 2021).

RQ3. How can L2 writing ideal self, enjoyment, and anxiety trajectories predict L2 writing achievement?

The study provides valuable insights by demonstrating that while the initial levels of ideal L2 writing self, L2 writing enjoyment, and L2 writing anxiety did not significantly impact L2 writing achievement, their trajectories played a crucial role in predicting L2 writing outcomes. **The** findings suggest that the starting point of the ideal L2 self does not directly predict L2 writing achievement. Instead, it is the trajectory, or the rate of change in the ideal L2 self over time, that significantly influences L2 writing performance. This underscores the notion that a learner's initial perception of their ideal L2 self, regardless of its strength, is less crucial than how this perception evolves throughout their language learning journey. Understanding this evolution is key to comprehending the role of motivation in L2 writing. While previous studies, such as those by Tahmouresi and Papi (2021), have emphasized the importance of ideal L2 self in predicting various outcomes, the current research expands this understanding by showing that the growth or advancement of this ideal L2 self is what truly matters. Learners who develop and refine their vision of the ideal L2 self over time are more likely to achieve higher writing scores. This suggests that efforts to enhance motivation should focus on assisting students continuously improve and strengthen their ideal L2 self throughout the learning process.

Secondly**,** similar to the ideal L2 writing self, the preliminary level of L2 writing enjoyment did not significantly influence writing achievement. However, the trajectory of enjoyment—reflecting the degree to which enjoyment increased over time—emerged as a significant predictor of L2 writing achievement. This highlights the dynamic nature of the affective dimension in L2 writing (Li et al., 2024). The study suggests that even learners who initially find it challenging to enjoy L2 writing can achieve high levels of performance if their enjoyment grows over time. This aligns with Deci and Ryan's (2000) concept of intrinsic motivation, which suggests that sustained or growing interest leads to greater engagement and outcomes. Therefore, educational strategies should focus on cultivating and gradually enhancing learners' enjoyment of writing, rather than relying solely on initial levels of enjoyment.

Finally, the findings of the current study revealed that the initial level of L2 writing anxiety did not significantly impact L2 writing achievement either. Instead, it was the pace of change in anxiety, particularly the sharpness of its decline, that negatively predicted writing performance. This finding is noteworthy because it suggests that learners who start with high anxiety but experience a significant decrease over time can still achieve high levels of success in L2 writing. Conversely, individuals whose anxiety remains stable or decreases only slightly are less likely to perform well in L2 writing. This underscores the importance of concentrating on reducing anxiety throughout

the learning process. The study supports the idea that managing anxiety should be a continuous effort, with interventions aimed at consistently lowering anxiety to improve writing outcomes.

Conclusion

By exploring the longitudinal relationships between L2 writing ideal self, enjoyment, and anxiety, and by comparing linear and curvilinear LGCMs in this study, we sought to address inconsistencies in previous research and provide deeper insights into the patterns of change (linear vs. curvilinear) and the co-development of these variables among EFL learners. The outcomes of the present study help explain the discrepancies observed in previous studies, emphasizing a dynamic perspective that shifts focus from fixed starting points to the importance of progression and evolution across time. Future studies should prioritize tracking the ongoing development of learners' motivational and emotional states, rather than merely, assessing their initial standings.

Additionally, the complex and dynamic relationships among ideal L2 writing self, L2 writing enjoyment, and L2 writing anxiety suggest that these constructs should not be addressed in isolation. For instance, enhancing the ideal L2 self may simultaneously reduce anxiety levels and increase enjoyment, creating a positive feedback loop that improves overall writing proficiency. This holistic approach to L2 writing instruction is supported by Li et al. (2023), who observed that cultivating emotional and motivational factors provides a more comprehensive understanding of the of L2 writing learning process.

Moreover, the results of this study have tangible pedagogical implications for L2 writing instruction. It is essential to recognize that students who start with lower levels of ideal L2 writing self and enjoyment, coupled with higher levels of anxiety, are likely to experience the most pronounced changes. This highlights the need for instructors to give special attention to these individuals. Strategies designed to enhance the ideal L2 writing self, such as setting realistic writing goals and providing positive reinforcement, may be particularly advantageous for students who begin the course with negative perceptions of their L2 writing abilities. Additionally, reducing anxiety through structured writing assignments, peer support, and anxiety management techniques could help students who enter the course with high anxiety levels to engage more positively with the writing process.

Despite these insights, several limitations of this study should be acknowledged. First, the sample was restricted to a single cultural and educational context, which may limit the generalizability of the findings to other populations (Henrich et al., 2010). Future research could benefit from including a more diverse range of EFL learners to explore how cultural and educational differences impact the interplay between L2 writing ideal self, enjoyment, and anxiety. Furthermore, this study relied on self-report measures, which may be subject to social desirability bias and might not fully capture the complexity of learners' emotional experiences over time (Podsakoff et al., 2003). Future studies could incorporate complementary methods, such as observational or physiological measures, to provide a more comprehensive view of the emotional dynamics in L2 writing (Yashima et al., 2016).

Finally, although this study provides valuable insights into the longitudinal development of these constructs, further research is necessary to examine additional factors that may interact with the Ideal L2 self, enjoyment, and anxiety. For instance, exploring the role of external influences, such as peer feedback and instructional methods, could enhance our understanding of how these variables evolve in different learning environments (Lantolf & Thorne, 2006; Mercer, 2011).

Expanding these areas would help refine strategies for fostering a supportive, motivating environment for L2 writing development.

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References

Cheng, Y. S. (2004). A measure of second language writing anxiety: Scale development and preliminary validation. *Journal of Second Language Writing*, *13*(4), 313–335. https://doi.org/10.1016/j.jslw.2004.07.001

Cheng, Y. S. (2017). Development and preliminary validation of four brief measures of L2 language-skill-specific anxiety. *System*, *68*, 15–25. https://doi.org/10.1016/j.system.2017.06.009

Collier, J. E. (2020). *Applied Structural Equation Modeling using AMOS*. Routledge.

Curran, P. J., & Willoughby, M. T. (2003). Implications of latent trajectory models for the study of developmental psychopathology. *Development and Psychopathology*, *15*(3), 581–612. https://doi.org/10.1017/s0954579403000300

Derakhshan, A. (2022). Revisiting research on positive psychology in second and foreign language education: Trends and directions. *Language Related Research*, *13*(5), 1–43. https://doi.org/10.52547/LRR.13.5.1

Derakhshan, A., Wang, Y., Wang, Y., & Ortega Martín, J. L. (2023). Towards innovative research approaches to investigating the role of emotional variables in promoting language teachers' and learners' mental health. *International Journal of Mental Health Promotion*, *25*(7), 823- 832. https://doi.org/10.32604/ijmhp.2023.029877

Dewaele, J.-M., & Dewaele, L. (2020). Are foreign language learners' enjoyment and anxiety specific to the teacher? An investigation into the dynamics of learners' classroom emotions. *Studies in Second Language Learning and Teaching*, *10*(1), 45–65. https://doi.org/10.14746/ssllt.2020.10.1.3

Dewaele, J.-M., & MacIntyre, P. D. (2014). The two faces of Janus? Anxiety and enjoyment in the foreign language classroom. *Studies in Second Language Learning and Teaching*, *4*(2), 237–274. https://doi.org/10.14746/ssllt.2014.4.2.5

Dörnyei, Z. (2005). *The psychology of the language learner*. Psychology Press.

Dörnyei, Z. (2009). The L2 motivational self-system. In Z. Dornyei, & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 9–42). Multilingual Matters.

Elahi Shirvan, M., & Taherian, T. (2018). Longitudinal examination of university students' foreign language enjoyment and foreign language classroom anxiety in the course of general English: latent growth curve modeling. *International Journal of Bilingual Education and Bilingualism*, *24*(1), 31–49. https://doi.org/10.1080/13670050.2018.1441804

Elahi Shirvan, M., Taherian, T., & Yazdanmehr, E. (2020). The dynamics of foreign language enjoyment: An ecological momentary assessment. *Frontiers in Psychology*, *11*. https://doi.org/10.3389/fpsyg.2020.01391

Elahi Shirvan, M., Taherian, T., & Yazdanmehr, E. (2021). Foreign language enjoyment: A longitudinal confirmatory factor analysis–curve of factors model. *Journal of Multilingual and Multicultural Development*, *45*(2), 224–242. https://doi.org/10.1080/01434632.2021.1874392

Fathi, J., Rahimi, M., & Liu, G. (2022). A preliminary study on flipping an English as a foreign language collaborative writing course with video clips: Its impact on writing skills and writing motivation. *Journal of Computer Assisted Learning*, *39*(2), 659–675. https://doi.org/10.1111/jcal.12772

Güvendir, E., & Uzun, K. (2023). L2 writing anxiety, working memory, and task complexity in L2 written performance. *Journal of Second Language Writing*, *60*, 101016. https://doi.org/10.1016/j.jslw.2023.101016

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, *33*(2–3), 61–83. https://doi.org/10.1017/s0140525x0999152x

Henry, A. (2020). Possible selves and personal goals: What can we learn from episodic future thinking? *Eurasian Journal of Applied Linguistics*, 479–498. https://doi.org/10.32601/ejal.834659

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, *94*(3), 319–340. https://doi.org/10.1037/0033-295x.94.3.319

Hiver, P., & Al-Hoorie, A. H. (2019). *Research methods for complexity theory in applied linguistics*. Multilingual Matters.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling a Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Karim, K., & Nassaji, H. (2013). First language transfer in second language writing: An examination of current research. *Iranian Journal of Language Teaching Research*, *1*(1), 117-134.

Kim, H. I. (2024). The effects of foreign language enjoyment and future selves on learning English. *The Journal of Experimental Education*, *92*(3), 452–465. https://doi.org/10.1080/00220973.2023.2219217

Kim, K. J., & Pae, T. (2021). Examining the simultaneous effects of L1 writing, L2 reading, L2 proficiency, and affective factors on different task types of L2 writing. *Discourse Processes*, *58*(7), 662–680. https://doi.org/10.1080/0163853x.2021.1872989

Kruk, M., Pawlak, M., Elahi Shirvan, M., Taherian, T., & Yazdanmehr, E. (2022). A longitudinal study of foreign language enjoyment and boredom: A latent growth curve modeling. *Language Teaching Research*. https://doi.org/10.1177/13621688221082303

Kruk, M., Pawlak, M., Taherian, T., Yüce, E., Elahi Shirvan, M., & Barabadi, E. (2023). When time matters: Mechanisms of change in a mediational model of foreign language playfulness and L2 learners' emotions using latent change score mediation model. *Studies in Second Language Learning and Teaching*, *13*(1), 39–69. https://doi.org/10.14746/ssllt.37174

Lantolf, J., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford University Press.

Larsen-Freeman, D. L., & Cameron, L. (2008). Research methodology on language development from a complex systems perspective. *Modern Language Journal*, *92*(2), 200–213. https://doi.org/10.1111/j.1540-4781.2008.00714.x

Li, C., Wei, L., & Lu, X. (2023). Contributions of foreign language writing emotions to writing achievement. *System*, *116*, 103074. https://doi.org/10.1016/j.system.2023.103074

Li, C., Wei, L., & Lu, X. (2024). Task complexity and L2 writing performance of young learners: Contributions of cognitive and affective factors. *Modern Language Journal*. https://doi.org/10.1111/modl.12954

Mercer, S. (2011). *Towards an understanding of language learner self-concept*. Springer Science & Business Media.

MacIntyre, P. D., & Gardner, R. C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning*, *44*(2), 283–305. https://doi.org/10.1111/j.1467-1770.1994.tb01103.x

Muthen, L. K., & Muthen, B. O. (2017). *Mplus version 8 user's guide*.

Piniel, K., & Csizér, K. (2015). Changes in motivation, anxiety, and self-efficacy during the course of an academic writing seminar. In Z. Dörnyei, P. D. MacIntyre, & A. Henry (Eds.), *Motivational dynamics in language learning* (pp. 164–194). Multilingual Matters.

Papi, M. (2021). The role of motivational and affective factors in L2 writing performance and written corrective feedback processing and use. In R. M. Manchón, & C. Polio (Eds.), *Routledge eBooks* (pp. 152–165). https://doi.org/10.4324/9780429199691-18

Papi, M., Tabari, M. A., & Sato, M. (2024). The importance of seeking feedback for benefiting from feedback: A case of second language writing. *Modern Language Journal*, *108*(2), 489–512. https://doi.org/10.1111/modl.12923

Papi, M., Vasylets, O., & Ahmadian, M. J. (2022). Individual difference factors for second language writing. In S. Li, P. Hiver, & M. Papi (Eds.), *The Routledge handbook of second language acquisition and individual differences* (pp. 381–396). Routledge.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903.

https://doi.org/10.1037/0021-9010.88.5.879

Rahimi, M., & Zhang, L. J. (2018). Writing task complexity, students' motivational beliefs, anxiety and their writing production in English as a second language. *Reading and Writing*, *32*(3), 761–786. https://doi.org/10.1007/s11145-018-9887-9

Rahimi, M., Fathi, J., & Zou, D. (2024). Exploring the impact of automated written corrective feedback on the academic writing skills of EFL learners: An activity theory perspective. *Education and Information Technologies*. https://doi.org/10.1007/s10639-024-12896-5

Sadeghi, K., & Pourbahram, R. (2024). Exploring factors affecting English language teacher wellbeing: Insights from positive psychology. *System*, *122*, 103274. https://doi.org/10.1016/j.system.2024.103274

Shabani, K. (2018). Group dynamic assessment of L2 learners' writing abilities. *Iranian Journal of Language Teaching Research*, *6*(1), 129-149. https://doi.org/10.30466/ijltr.2018.20494

Shafiee Rad, H. S., & Jafarpour, A. (2022). Effects of well-being, grit, emotion regulation, and resilience interventions on L2 learners' writing skills. *Reading & Writing Quarterly*, *39*(3), 228–247. https://doi.org/10.1080/10573569.2022.2096517

Solhi, M., Derakhshan, A., Pawlak, M., & Ünsal-Görkemoğlu, B. (2024). Exploring the interplay between EFL learners' L2 writing boredom, writing motivation, and boredom coping strategies. *Language Teaching Research*. https://doi.org/10.1177/13621688241239178

Taherian, T., Fazilatfar, A. M., & Mazdayasna, G. (2021). Joint growth trajectories of trait emotional intelligence subdomains among l2 language learners: Estimating a second-order factor-of-curves model with emotion perception. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.720945

Taherian, T., Elahi Shirvan, M., Yazdanmehr, E., Kruk, M., & Pawlak, M. (2024). A longitudinal analysis of informal digital learning of English, willingness to communicate and foreign language boredom: A latent change score mediation model. *The Asia-Pacific Education Researcher*, *33*, 997–1010. https://doi.org/10.1007/s40299-023-00751-z

Tahmouresi, S., & Papi, M. (2021). Future selves, enjoyment and anxiety as predictors of L2 writing achievement. *Journal of Second Language Writing*, *53*, 100837. https://doi.org/10.1016/j.jslw.2021.100837

Van Dijk, M., Lowie, W., Smit, N., Verspoor, M., & Van Geert, P. (2024). Complex dynamic systems theory as a foundation for process-oriented research on second language development. *Second Language Research*. https://doi.org/10.1177/02676583241246739

Wang, K., Zhang, L. J., & Cooper, M. (2024). Metacognitive instruction for improving the effectiveness of collaborative writing for EFL learners' writing development. *The Asia-Pacific Education Researcher*. https://doi.org/10.1007/s40299-024-00886-7

Wickrama, K. a. S., Lee, T. K., O'Neal, C. W., & Lorenz, F. O. (2021). *Higher-order growth curves and mixture modeling with Mplus*.

Yashima, T., MacIntyre, P. D., & Ikeda, M. (2016). Situated willingness to communicate in an L2: Interplay of individual characteristics and context. *Language Teaching Research*, *22*(1), 115–137. https://doi.org/10.1177/1362168816657851

Yao, Y., Zhu, X., & Zhan, J. (2024). The associations among growth mindsets, the ideal L2 writing self, and L2 writing enjoyment and their impacts on L2 English writing performance: A gender difference perspective. *Assessing Writing*, *60*, 100832. https://doi.org/10.1016/j.asw.2024.100832

Yu, H., Peng, H., & Lowie, W. M. (2022). Dynamics of language learning motivation and emotions: A parallel-process growth mixture modeling approach. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.899400

Zhang, S. (1995). Reexamining the affective advantage of peer feedback in the ESL writing class. *Journal of Second Language Writing*, *4*(3), 209–222. https://doi.org/10.1016/1060-3743(95)90010-1

Zhang, C., & Zhang, W. (2022). The impact of academic procrastination on second language writing: The mediating role of l2 writing anxiety. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.851120

Zhang, L. J., & Zhang, J. (2024). EFL students' syntactic complexity development in argumentative writing: A latent class growth analysis (LCGA) approach. *Assessing Writing*, *61*, 100877. https://doi.org/10.1016/j.asw.2024.100877

Zhao, P., Zhu, X., Yao, Y., & Liao, X. (2023). Ideal L2 self, enjoyment, and strategy use in L2 integrated writing: A self-regulatory learning perspective. *System*, *115*, 103033. https://doi.org/10.1016/j.system.2023.103033

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