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Foreign Language Enjoyment and Anxiety in Chinese EFL Classrooms: A Latent Profile Analysis of Learner Subtypes

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Abstract

Foreign language enjoyment (FLE) and foreign language classroom anxiety (FLCA) are among the most intensively studied emotions in second language (L2) learning. Yet the existing literature is dominated by a variable-centred logic, reporting the average strength of association between the two constructs and thereby leaving a substantive question unanswered: how do enjoyment and anxiety combine within the same learner? Framed by control-value theory and broaden-and-build theory, this study examined 1,086 non-English-major undergraduates drawn from three universities in eastern China. Latent profile analysis (LPA) was applied to identify enjoyment–anxiety configurations, and R3STEP and BCH procedures were used to test profile differences in academic achievement, classroom engagement, gender, major, and year of study. Four interpretable profiles emerged: dual-high (14.2%), enjoyment-dominant (38.6%), anxiety-dominant (30.1%), and dual-low (17.1%). The four-profile solution yielded an entropy of 0.847, and both the BLRT and the LMR-LRT indicated a significant improvement over the three-profile solution. Enjoyment and anxiety did not function as opposite poles of a single dimension. The dual-high profile, comprising one seventh of the sample, did not differ significantly from the anxiety-dominant profile in anxiety, yet its enjoyment approached that of the enjoyment-dominant profile—indicating that high enjoyment does not offset high anxiety. BCH tests revealed significant associations between profiles and both achievement and engagement, with medium-to-large effect sizes (Cohen's d = 0.52–1.13); the dual-low profile reported the lowest engagement, and the anxiety-dominant profile the lowest achievement. Profile distribution varied by year of study, with sophomores significantly over-represented in the anxiety-dominant profile relative to first-year students. We argue that a person-centred lens discloses configurational heterogeneity that variable-centred methods necessarily obscure, and that classroom intervention should move beyond single-direction strategies—raising enjoyment or lowering anxiety—toward profile-tailored combinations.

Keywords

Foreign Language Enjoyment; Foreign Language Classroom Anxiety; Latent Profile Analysis; Learner Heterogeneity; Positive Psychology

1. Introduction

The foreign language classroom is an emotionally dense environment. Learners must simultaneously perform language production in public and absorb immediate evaluation from peers and teachers, so that emotional fluctuations are almost synchronous with each act of speaking. For a considerable period, scholarly attention to this emotional dimension ran in one direction only: anxiety was measured and modelled repeatedly, becoming one of the most thoroughly accumulated constructs in research on individual differences in second language acquisition (Horwitz et al., 1986). Only with the arrival of positive psychology was the other half of the emotional spectrum systematically illuminated. Dewaele and MacIntyre (2014), surveying 1,746 multilingual learners, introduced the construct of foreign language enjoyment (FLE) and, under the metaphor of "the two faces of Janus," argued that enjoyment and anxiety are not two ends of a single continuum but two separable dimensions. That claim has since been supported by large-scale evidence: a meta-analysis incorporating 96 effect sizes and a cumulative sample of 28,166 learners reported a moderate negative correlation between FLE and foreign language anxiety—far from a mirror-image relationship—alongside moderate positive correlations between FLE and willingness to communicate, academic achievement, and self-perceived achievement (Botes et al., 2022).

The Chinese context carries particular weight in this debate. As the country with the largest population of English learners in the world, China's English classrooms simultaneously bear intense examination pressure and a pedagogical reform that increasingly emphasises communication, and learners' emotional experience consequently exhibits a distinctive tension. Jiang and Dewaele (2019), studying 564 Chinese undergraduates, found that their FLE levels were comparable to those of international samples while their FLCA levels were significantly higher; moreover, FLE was predicted more strongly by teacher-related variables and FLCA more strongly by learner-internal variables. This configuration—"enjoyment not low, anxiety higher"—suggests that the emotional structure of Chinese learners may not be a simple bipolar distribution of "high enjoyment–low anxiety" versus "low enjoyment–high anxiety," but rather a coexistence of multiple configurations.

The problem lies precisely here. The overwhelming majority of existing studies adopt a variable-centred approach, estimating within a single regression or structural equation model the average effect of FLE and FLCA on some outcome variable. The premise of this approach is sample homogeneity: that all learners share one and the same set of parameters. If the population actually contains several

subpopulations with distinct emotional configurations, the average effect becomes a weighted product of multiple opposing or divergent mechanisms, potentially underestimating the true risk borne by some subpopulations while overestimating that of others. Consider the question at issue here. If one group of learners holds high enjoyment and high anxiety simultaneously while another holds low levels of both, then the aggregate conclusion that "enjoyment correlates negatively with anxiety" holds for neither group, and any intervention designed on that basis will miss its target.

Person-centred latent profile analysis (LPA) offers an appropriate analytic tool for this problem. LPA assumes that a sample is a mixture of several latent subpopulations characterised by distinct mean configurations across indicator variables; the optimal solution is determined by comparing model fit across different numbers of profiles, after which individuals are assigned probabilistically to profiles (Nylund et al., 2007). The method has matured in organisational behaviour and educational psychology, and Yin et al. (2020) have systematically reviewed its application conventions regarding the determination of profile number, sample requirements, and the role of theory. In L2 emotion research, LPA has begun to appear only recently: Li et al. (2023) took L2 mindset as the classifying indicator, identified four learner types—growth, high-mixed, low-mixed, and fixed—and found systematic differences in FLE and FLCA across them. That study, however, used mindset as the classifying indicator and positioned the emotion variables as outcomes. To date, no study has taken foreign language enjoyment and classroom anxiety themselves as classifying indicators in order to examine how the two combine within the Chinese English classroom.

The present study addresses this gap. We implemented LPA using the dimension scores of FLE and FLCA as indicators, and posed three questions: (1) Into which configurations can the foreign language enjoyment and classroom anxiety of Chinese non-English-major undergraduates be grouped, and what proportion of the sample does each configuration comprise? (2) Do profiles differ in academic achievement and classroom engagement, and how large are the effect sizes of those differences? (3) Is the distribution of profiles balanced across gender, major, and year of study? The second question was addressed using BCH and R3STEP procedures, thereby avoiding the classification-error bias introduced by a "classify-then-ANOVA" sequence.

2. Literature Review and Theoretical Framework

2.1. Foreign Language Enjoyment: From Neglected Positive Emotion to Independent Construct

Enjoyment entered the L2 research agenda only recently. In reviewing the literature, Dewaele and MacIntyre (2014) found merely nine scholarly works with "enjoyment" in the title, of which only two were genuine research articles. They

defined enjoyment as "a positive emotion arising from the pleasure derived from learning a foreign language or experienced in the foreign language classroom," and developed a 21-item Foreign Language Enjoyment Scale. A principal components analysis of 1,746 learners decomposed FLE into three components: FLE-Social (pertaining to social interaction, such as pleasurable experiences shared with peers and teachers), FLE-Private (pertaining to personal achievement, such as pride in completing a task), and FLE-Teacher (pertaining to the teacher's instructional style and personal appeal). Notably, the three components differed in the strength of their association with anxiety, with FLE-Private showing the strongest negative correlation. This internal differentiation is itself instructive: enjoyment is not an emotional block that can be handled as a whole, and its connection to anxiety varies with its source.

In a subsequent chapter, the same two authors argued, under the metaphor of "the language learner's left and right feet," for the functional equivalence of the two emotions in language development: enjoyment propels learners toward communicative situations while anxiety drives them to withdraw—one advancing, one retreating—and together they determine whether a learner genuinely enters the language. The key practical implication is that teachers should strive to raise FLE rather than merely attempting to suppress FLCA.

Scale adaptation for the Chinese context was undertaken by Li et al. (2018). Drawing on two samples of 1,718 and 360 secondary school students, they revised the original 21-item instrument into an 11-item, three-factor structure comprising FLE-Private, FLE-Teacher, and FLE-Atmosphere, and demonstrated sound psychometric properties. The significance of this revision extends beyond instrumentation: several items in the original scale loaded weakly in Chinese secondary settings, indicating that the sources of enjoyment are culturally contingent, and that Chinese learners derive enjoyment more from teacher affirmation and classroom climate than from affinity with the target-language culture.

2.2. Foreign Language Classroom Anxiety: A Mature but Still Contested Construct

The research history of anxiety is considerably longer than that of enjoyment. Horwitz et al. (1986) defined foreign language classroom anxiety as "a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process," and developed the 33-item Foreign Language Classroom Anxiety Scale (FLCAS). Organised around communication apprehension, test anxiety, and fear of negative evaluation, the instrument remains the most widely used measure in the field, and the original article has become the most highly cited paper in that journal's history.

The maturity of anxiety research has brought with it a reconsideration of the

intuition that anxiety is necessarily harmful. Moderate anxiety may activate attentional resources and raise preparatory investment; only when anxiety exceeds task demands does it consume working memory capacity and interfere with processing efficiency. This non-linear relationship furnishes an essential theoretical premise for the present study: if the relationship between anxiety and outcomes is not monotonic, then identifying at the individual level "at what intensity anxiety is operating and in what ratio to enjoyment" is more valuable than estimating a single sample-wide slope.

2.3. Control-Value Theory and Broaden-and-Build Theory: How Coexistence Becomes Possible

Why enjoyment and anxiety can coexist demands a direct theoretical answer. Pekrun's (2006) control-value theory offers the most systematic framework available. The theory holds that achievement emotions arise from two classes of cognitive appraisal: control appraisals, that is, learners' judgements of whether they can complete a learning task and influence its outcome; and value appraisals, that is, judgements of whether the task itself matters and whether the outcome is meaningful. Different combinations of appraisals elicit different emotions: high control combined with high positive value elicits enjoyment, whereas low control combined with high value elicits anxiety. Crucially, the two classes of appraisal can hold simultaneously within the same situation. A student may be confident that sustained effort will yield mastery of the language (relatively high process control) while also perceiving examination rankings and others' evaluations as vitally important and partly uncontrollable (high outcome value, lower outcome control)—and thus enjoyment and anxiety are activated together.

Broaden-and-build theory supplies the other half of the picture from the functional side. Fredrickson (2001) demonstrated that positive emotions broaden the scope of attention and cognition, prompting individuals to try new behaviours and, in the process, to build durable personal resources, whereas negative emotions narrow attention and activate specific action tendencies. The two are not additions and subtractions within a single mechanism but two systems operating in parallel. This implies that high enjoyment cannot simply "cancel out" high anxiety: enjoyment broadens the space for exploration and connection, while anxiety narrows the room available for present performance, and the two may coexist over long periods within the same person, forming a configuration of "willing to invest, yet afraid of erring."

Taken together, the two theories suggest that the learner population should be emotionally heterogeneous, and that the forms of that heterogeneity should exceed two. This constitutes the theoretical rationale for adopting a person-centred method here, and the reason we expected the number of profiles to exceed two.

2.4. Emotion and Academic Outcomes: The Limits of Variable-Centred Evidence

The available evidence on emotion and outcomes is remarkably consistent. Botes et al. (2022) reported moderate positive correlations between FLE and both academic achievement and self-perceived achievement. Jiang and Dewaele (2019) found that FLE is driven by teacher factors while FLCA is driven by learner factors; the divergence of their sources implies divergence in the pathways through which they operate on outcomes, and offers indirect evidence for a mediating route from emotion, through classroom engagement, to achievement.

Yet these findings share a methodological limitation: they estimate structural parameters averaged across the sample. If a population contains four types—high enjoyment/low anxiety, high enjoyment/high anxiety, low enjoyment/high anxiety, and low enjoyment/low anxiety—and if these types differ in outcome levels, then the average model describes only a regression line drawn through four clusters of points. It can explain neither the mechanism operating within any single cluster nor the magnitude of the gaps between clusters. Li et al. (2023) likewise observed a clear stepwise pattern in FLE across their profiles, with between-profile resolution markedly stronger than the effect sizes obtainable from the same data within a variable-centred framework. This suggests that the profile lens tends to amplify between-group differences that averaging has flattened.

2.5. Hypotheses

Three hypotheses are advanced on the basis of the foregoing literature and theory.

H1: Three or more emotional configuration profiles will be identified, including a "dual-high" profile in which enjoyment and anxiety are both elevated. The rationale lies in the coexistence of high process control and low outcome control permitted by control-value theory, together with the "enjoyment not low, anxiety higher" configuration reported for Chinese learners by Jiang and Dewaele (2019).

H2: Profiles will differ significantly in academic achievement and classroom engagement, and the differences will not take the form of a unidirectional hierarchy in which "higher emotion profiles outperform lower emotion profiles"; rather, the dual-high profile should occupy an intermediate position. The rationale is the functional independence of the two emotions: enjoyment supplies approach motivation while anxiety depletes cognitive resources, so the net effect depends on their relative intensity.

H3: Profile distribution will be uneven across years of study, with a higher proportion of the anxiety-dominant profile among more advanced students. The rationale is that English courses in Chinese universities are concentrated in the first and second years; as the CET-4 examination approaches and course credits are compressed, learners' outcome value appraisals rise while their control appraisals fall, and the relative intensity of anxiety increases accordingly.

3. Method

3.1. Participants

Participants were non-English-major undergraduates enrolled at three universities in eastern China (one under the Ministry of Education, two provincial), spanning the disciplinary categories of science and engineering, economics and management, and the humanities. Stratified cluster sampling was employed, with questionnaires distributed by intact class. Of 1,240 questionnaires distributed, 1,086 valid responses were retained, yielding a valid response rate of 87.6%. Exclusion criteria were: completion time under five minutes; identical responses across ten or more consecutive items; and self-contradictory responses between forward- and reverse-keyed items.

The sample comprised 512 men (47.1%) and 574 women (52.9%); 402 first-year students (37.0%), 436 second-year students (40.1%), and 248 third-year students (22.8%); and 489 students in science and engineering (45.0%), 372 in economics and management (34.3%), and 225 in the humanities (20.7%). Mean age was 19.4 years (SD = 1.12). All participants had completed at least one semester of college English and were taking, or had taken, both the reading-and-writing and the viewing-listening-speaking courses.

3.2. Instruments

Foreign language enjoyment. The Chinese version of the Foreign Language Enjoyment Scale revised by Li et al. (2018) was used, comprising 11 items across three dimensions: FLE-Private (4 items), FLE-Teacher (4 items), and FLE-Atmosphere (3 items). Items were rated on a five-point scale (1 = strongly disagree, 5 = strongly agree). In the present study, Cronbach's α for the total scale was .91, with subscale values of .85, .88, and .79. Confirmatory factor analysis indicated good fit for the three-factor model (χ^2/df = 2.41, CFI = .96, TLI = .95, RMSEA = .048, SRMR = .037).

Foreign language classroom anxiety. The Chinese version of the FLCAS developed by Horwitz et al. (1986) and translated and revised by domestic scholars was used, retaining 20 of the original 33 items (13 items with weak loadings in the Chinese context, pertaining to situations such as conversing with native speakers, were removed). Items were rated on a five-point scale. Cronbach's α was .90. The single-factor structure showed acceptable fit (χ^2/df = 2.88, CFI = .93, TLI = .91, RMSEA = .056, SRMR = .045).

Classroom engagement. A self-developed Classroom Engagement Scale was used, comprising behavioural engagement (5 items, e.g., "I volunteer to speak in English class"), emotional engagement (4 items, e.g., "I look forward to English class"), and cognitive engagement (4 items, e.g., "After class I organise my notes and reflect on problems in my own expression"), 13 items in total, rated on a five-point scale. Cronbach's α for the total scale was .89, and the three-factor model fitted well (χ^2/df = 2.19, CFI = .97, TLI = .96, RMSEA = .044, SRMR = .031).

Academic achievement. Participants' overall grades in the college English course of the preceding semester were obtained from the academic affairs system on a 100-point scale, avoiding self-report bias. To eliminate differences in grading standards across the three institutions, grades were converted to within-institution z scores before being pooled; z scores entered the models, while descriptive statistics report the raw scores (M = 78.6, SD = 9.4).

3.3. Analytic Strategy

Selection of classifying indicators. The three FLE dimension scores and the single FLCA total score—four variables in all—served as LPA indicators. Dimensions were chosen over the composite score because Dewaele and MacIntyre (2014) established that the three FLE components differ in the strength of their association with anxiety; entering the composite would have artificially flattened this internal variation. All indicators were standardised to remove scale effects.

Determination of profile number. Models specifying two through six profiles were fitted sequentially. Each model was estimated with 500 sets of random starting values, 50 iterations, and retention of the 100 best solutions, ensuring that the log-likelihood converged on the global rather than a local maximum. Model comparison rested on five criteria: (1) AIC, BIC, and sample-size-adjusted BIC (aBIC), with lower values preferred; (2) entropy, ranging from 0 to 1, with values above .80 indicating good classification accuracy; and (3) the Lo-Mendell-Rubin adjusted likelihood ratio test (LMR-LRT) and the bootstrap likelihood ratio test (BLRT), where $p < .05$ indicates that the k-profile model significantly outperforms the (k−1)-profile model. The simulation study by Nylund et al. (2007) showed that, at sample sizes between 200 and 1,000, the BLRT is the most consistent indicator for determining the number of profiles, while the BIC performs best among the information criteria. The present study therefore prioritised the BLRT and BIC, supplemented by entropy and theoretical interpretability, and further required that the smallest profile contain no less than 5% of the sample, so as to avoid identifying spurious profiles supported only by a handful of extreme cases.

Treatment of covariates and outcomes. The R3STEP method was used to test the predictive effects of gender, major, and year of study on profile membership. This method conducts multinomial logistic regression with classification error incorporated into the model, avoiding the bias introduced by "hard classification followed by chi-square testing." Outcome variables (academic achievement and classroom engagement) were analysed using the BCH method, which performs weighted analysis using the classification error matrix as weights and does not require re-estimation of the model, so that the original profile solution is not altered by the inclusion of outcomes. Pairwise comparisons employed Wald chi-square tests with Benjamini-Hochberg correction for multiple comparisons, and effect sizes were reported as Cohen's d.

All analyses were conducted in Mplus 8.3, with descriptive statistics and correlations computed in SPSS 26.0. The proportion of missing data was below 3%, and FIML was used.

3.4. Common Method Bias

Because the FLE, FLCA, and engagement scales were all self-reported at a single time point, common method bias was a possibility. Two controls were applied: procedurally, item order was randomised, four reverse-keyed items were embedded, and administration was anonymous; statistically, Harman's single-factor test showed that the first unrotated factor accounted for 26.4% of the variance, below the 40% threshold, indicating that common method bias did not pose a serious threat.

4. Results

4.1. Descriptive Statistics and Correlations

Table 1 presents means, standard deviations, and correlations among the variables. The FLE total mean was 3.52 (SD = 0.68) and the FLCA total mean was 3.18 (SD = 0.71), with a moderate negative correlation between them ($r = -.41$, $p < .001$). This closely matches the moderate negative correlation reported in the meta-analysis by Botes et al. (2022), and again confirms that the two constructs are not interchangeable.

Table 1. Descriptive Statistics and Correlations (N = 1,086)

Variable	M	SD	1	2	3	4	5
1 FLE-Private	3.61	0.74	—				
2 FLE-Teacher	3.58	0.79	.58***	—			
3 FLE-Atmosphere	3.29	0.76	.52***	.61***	—		
4 FLCA	3.18	0.71	−.33***	−.27***	−.38***	—	
5 Classroom engagement	3.34	0.66	.47***	.44***	.51***	−.36***	—
6 Academic achievement (z)	0.00	1.00	.29***	.22***	.26***	−.31***	.38***

Note. *** $p < .001$.

Notably, the three FLE dimensions differed appreciably in the strength of their correlations with FLCA: the negative correlation of FLE-Private ($r = -.33$) was stronger than that of FLE-Teacher ($r = -.27$), while FLE-Atmosphere showed the strongest negative correlation ($r = -.38$). This partially converges with the finding of Dewaele and MacIntyre (2014) that private enjoyment is most strongly associated with anxiety, and further suggests that, in the Chinese classroom, classroom atmosphere may be the pivotal node of emotional linkage.

4.2. Latent Profile Analysis

Table 2 presents fit indices for the two- through six-profile models.

Table 2. Fit Indices for Latent Profile Models (N = 1,086)

Model	AIC	BIC	aBIC	Entropy	LMR-LRT (p)	BLRT (p)	Smallest profile
2 profiles	10,842.6	10,912.3	10,867.5	.782	< .001	< .001	41.3%
3 profiles	10,431.8	10,526.4	10,464.1	.813	< .001	< .001	18.7%
4 profiles	10,168.2	10,287.7	10,207.9	.847	< .001	< .001	14.2%
5 profiles	10,121.5	10,265.8	10,168.5	.801	.214	.031	6.8%
6 profiles	10,098.7	10,267.9	10,153.1	.776	.436	.082	3.9%

From two to four profiles, the AIC, BIC, and aBIC declined continuously while entropy rose in parallel. At five profiles, although the BIC continued to decline, the LMR-LRT was no longer significant (p = .214), entropy fell back to .801, and the smallest profile shrank to 6.8%. At six profiles the BLRT also became non-significant (p = .082), the smallest profile comprised only 3.9%, and a profile containing just 42 individuals appeared whose configuration defied theoretical interpretation. The four-profile solution was therefore judged optimal.

The configurations of the four profiles are shown in Table 3 (with standardised means as the metric). For ease of interpretation, each profile was named according to the relative position of FLE and FLCA.

- **Profile 1, "Dual-high" (n = 154, 14.2%):** means on all three FLE dimensions exceeded the sample mean by more than 0.5 SD, and FLCA also exceeded the mean by 0.6 SD. These learners find the classroom both pleasurable and engaging, yet are highly tense.
- **Profile 2, "Enjoyment-dominant" (n = 419, 38.6%):** means on all three FLE dimensions were substantially above the mean (0.7 to 0.9 SD), while FLCA fell about 0.8 SD below the mean. This is the most favourable configuration.
- **Profile 3, "Anxiety-dominant" (n = 327, 30.1%):** means on all three FLE dimensions fell below the mean (−0.4 to −0.6 SD), while FLCA exceeded the mean by nearly 1 SD. This is the configuration of greatest emotional risk.
- **Profile 4, "Dual-low" (n = 186, 17.1%):** both FLE and FLCA fell below the mean, with FLE more than 1.0 SD below the mean and FLCA about 0.5 SD below. These learners' emotional responses were muted; they neither found pleasure nor reported tension.

Table 3. Standardised Means of the Four Emotional Configuration Profiles

Profile	FLE-Private	FLE-Teacher	FLE-Atmosphere	FLCA	Proportion
Dual-high	0.71	0.58	0.63	0.62	14.2%
Enjoyment-dominant	0.86	0.79	0.91	−0.78	38.6%

Anxiety-dominant	−0.52	−0.41	−0.58	0.94	30.1%
Dual-low	−1.12	−1.06	−1.03	−0.51	17.1%

Wald tests across the four profiles were significant for FLE-Private, FLE-Teacher, and FLE-Atmosphere (χ^2 = 412.6, 378.4, and 436.9 respectively, $p < .001$) and for FLCA (χ^2 = 521.8, $p < .001$), confirming that the profiles were effectively differentiated.

4.3. Profiles and Covariates: R3STEP Results

With the enjoyment-dominant profile as the reference class, the R3STEP multinomial logistic regression results (Table 4) showed that gender did not significantly predict profile membership; gender coefficients were non-significant across all three contrast equations (p ranging from .138 to .742). The effect of major was limited, with humanities students showing a lower relative probability of membership in the anxiety-dominant profile than science and engineering students (B = −0.41, OR = 0.66, p = .021).

The effect of year of study was the clearest. Relative to first-year students, second-year students had a significantly higher relative probability of membership in the anxiety-dominant profile (B = 0.63, OR = 1.88, $p < .001$) and also in the dual-high profile (B = 0.47, OR = 1.60, p = .008). Third-year students still showed a higher probability of anxiety-dominant membership than first-year students, though the increase was smaller than that of second-year students (B = 0.38, OR = 1.46, p = .031).

Table 4. R3STEP Multinomial Logistic Regression of Covariates on Profile Membership (Reference: Enjoyment-dominant)

Predictor	Dual-high B (SE)	OR	Anxiety-dominant B (SE)	OR	Dual-low B (SE)	OR
Gender (female = 1)	−0.18 (0.21)	0.84	−0.09 (0.17)	0.91	0.12 (0.19)	1.13
Major (humanities vs. science/engineering)	−0.24 (0.26)	0.79	−0.41* (0.18)	0.66	−0.15 (0.23)	0.86
Major (economics/management vs. science/engineering)	0.07 (0.20)	1.07	−0.11 (0.16)	0.90	0.05 (0.19)	1.05
Year (second vs. first)	0.47** (0.18)	1.60	0.63*** (0.15)	1.88	0.21 (0.18)	1.23
Year (third vs. first)	0.22 (0.21)	1.25	0.38* (0.18)	1.46	0.29 (0.22)	1.34

Note. * p < .05, ** p < .01, *** p < .001. SE = standard error.

4.4. Profiles and Outcomes: BCH Results

BCH weighted analyses revealed significant differences among the four profiles in both academic achievement (χ^2 = 84.3, $p < .001$) and classroom engagement (χ^2 =

137.6, p < .001; Table 5).

Table 5. BCH Comparisons of Achievement and Engagement Across Profiles

Profile	Academic achievement (z)	Classroom engagement	n
Dual-high	0.21 (0.09)	3.62 (0.07)	154
Enjoyment-dominant	0.34 (0.06)	3.78 (0.05)	419
Anxiety-dominant	−0.38 (0.06)	2.94 (0.05)	327
Dual-low	−0.19 (0.08)	2.71 (0.06)	186

Note. Standard errors in parentheses. Achievement is expressed as within-institution z scores.

Academic achievement. The enjoyment-dominant profile scored significantly higher than the other three (vs. dual-high: d = 0.14, p = .041; vs. anxiety-dominant: d = 1.13, p < .001; vs. dual-low: d = 0.63, p < .001). The dual-high profile scored significantly higher than the anxiety-dominant (d = 0.68, p < .001) and dual-low (d = 0.52, p < .001) profiles. The difference between the anxiety-dominant and dual-low profiles was non-significant (d = −0.22, p = .062). The ordering was thus: enjoyment-dominant > dual-high > dual-low ≈ anxiety-dominant.

Classroom engagement. The enjoyment-dominant profile was highest and the dual-high profile second, with a significant difference between them (d = 0.24, p = .004). The dual-high profile was significantly higher than the anxiety-dominant (d = 0.94, p < .001) and dual-low (d = 1.02, p < .001) profiles, and the anxiety-dominant profile exceeded the dual-low profile (d = 0.35, p = .001). The ordering was: enjoyment-dominant > dual-high > anxiety-dominant > dual-low.

The two outcome patterns take different shapes and merit separate comment. In achievement, although the dual-high profile scored below the enjoyment-dominant profile, it scored clearly above both low-enjoyment profiles—indicating that high enjoyment contributes substantially to achievement even when accompanied by high anxiety. In engagement, the dual-high profile approached the enjoyment-dominant profile, while the anxiety-dominant and dual-low profiles lagged far behind. This implies that the dual-high profile is not a dysfunctional state—its members occupy an upper-middle position in both achievement and engagement—yet their anxiety is virtually on par with that of the anxiety-dominant profile, and sustaining this state over the long term may carry a risk of emotional exhaustion.

5. Discussion

5.1. Four Forms of Emotional Configuration and Their Theoretical Significance

The four-profile solution supported H1, but its specific forms yielded information beyond the hypothesis. We anticipated at least one dual-high profile, but did not anticipate that it would comprise 14.2% of the sample, still less that a dual-low

profile would emerge at a scale of 17.1%.

The existence of the dual-high profile is the most direct evidence for control-value theory. In Pekrun's (2006) framework, enjoyment arises from the combination of high control appraisal and high positive value appraisal, while anxiety arises from low control appraisal combined with high value appraisal. These appear mutually exclusive but in fact pertain to two different levels, process and outcome: a learner may hold a relatively high sense of control over "improving expression through practice" (high process control) while lacking control over "whether I can answer without error when called upon" (low outcome control), and may attach high value to both. The typical structure of the Chinese English classroom amplifies this separation—day-to-day teaching emphasises participation and progress, whereas end-of-term evaluation depends heavily on a single examination and on accuracy. "Enjoying the course yet dreading being called on" thus becomes a stable psychological form rather than a transitional state.

The theoretical standing of the dual-low profile is equally important. This group's FLE and FLCA both fall below the mean; judged by anxiety alone, they would be assessed as "well adjusted," yet their classroom engagement is the lowest of the four profiles (2.71) and their achievement is below that of the dual-high and enjoyment-dominant profiles. This indicates that low anxiety does not equal positive adaptation: emotional disengagement is likewise a state warranting attention. Existing research habitually treats "declining anxiety" as the marker of successful intervention; without discrimination, such efforts may push learners toward the dual-low rather than the enjoyment-dominant profile. This finding echoes the position of Dewaele and MacIntyre (2014) that teachers should strive to raise FLE rather than merely to suppress FLCA.

The enjoyment-dominant and anxiety-dominant profiles occupy the two poles, comprising 38.6% and 30.1% respectively. The two differ by approximately 1.7 SD in FLE and by approximately 1.7 SD in FLCA, constituting a classic high-contrast pair.

5.2. Enjoyment Does Not Offset Anxiety: Refining the "Two Faces" Proposition

Dewaele and MacIntyre (2014) used "the two faces of Janus" to show that FLE and FLCA are two separable dimensions. The present study supplements that proposition with configurational evidence at the individual level. The sample-wide FLE–FLCA correlation was −.41; to stop there would yield the conclusion that "the two are moderately negatively correlated." Profile analysis, however, shows that this negative correlation does not hold within the dual-high profile, whose members score 0.6 SD above the mean in FLE and 0.6 SD above the mean in FLCA. In other words, the aggregate negative correlation is a product of between-group differences rather than a portrait of within-group relations—precisely the classic limitation of

variable-centred methods.

From the standpoint of broaden-and-build theory, this result is unsurprising. The positive-emotion effects described by Fredrickson (2001)—broadening attention and building resources—and the negative-emotion effect of narrowing attention to cope with threat operate on different cognitive channels and bear no zero-sum, conservation-style relation. A student may be willing to speak because classroom activities are interesting (enjoyment driving approach) while simultaneously experiencing a racing heart from fear that pronunciation will be corrected (anxiety driving vigilance). An intervention addressing only one end will not automatically relieve the other.

5.3. Year Differences: The Temporal Profile of Anxiety

H3 was supported, though the pattern proved more complex than anticipated. The relative probability of second-year students falling into the anxiety-dominant profile was 1.88 times that of first-year students, consistent with the timing of the CET-4 examination: most universities schedule the test in the second year, when the outcome value of the examination peaks while learners' control appraisals—rendered realistic or even pessimistic by mock-test feedback—decline. The odds ratio for third-year students, though lower (OR = 1.46), remained significantly above that of first-year students, suggesting that anxiety does not fully dissipate once the examination ends but may partly transfer to concerns about postgraduate entrance examinations and employment.

It is instructive that second-year students were also significantly more likely than first-year students to fall into the dual-high profile (OR = 1.60). This suggests that the effect of year of study is not a unidirectional push toward "greater anxiety" but a simultaneous divergence toward both the dual-high and anxiety-dominant profiles—some students retain enjoyment under pressure while others lose it. This divergence process itself warrants subsequent characterisation through longitudinal designs.

5.4. Practical Implications: From Single-Direction to Stratified Strategies

If the configurational structure described above is accepted, the logic of classroom intervention requires adjustment. Prevailing recommendations are largely unidirectional: either to raise enjoyment through gamification and authentic materials, or to relieve anxiety by reducing evaluation pressure. The existence of four profiles implies that the net effect of a single measure may be opposite across profiles.

For the dual-high profile, the key is not to add further enjoyment but to reduce the marginal cost of anxiety. These students are enthusiastic and reasonably engaged; what depletes them is fear of immediate evaluation. Feasible measures include

replacing public error correction with written feedback, allowing preparation time before questioning, and permitting students to choose the order in which they respond. Such measures leave the value appraisal of the task unchanged while raising control at the outcome level—precisely the point at which control-value theory locates the generation of anxiety.

For the anxiety-dominant profile, anxiety-reduction measures alone are often insufficient, because their low enjoyment is not merely a by-product of anxiety but stems from a prolonged absence of success experiences. A more appropriate route is to engineer controllable success: dividing tasks into units completable within short periods, so that learners obtain a definite sense of completion at each unit, thereby raising both process control appraisals and enjoyment simultaneously.

For the dual-low profile, the core problem is the absence of value appraisal. These learners are not incapable but indifferent. Conventional enjoyment-enhancing devices such as playful activities are unlikely to be effective; what is more probably required is the reconstruction of value connections through authentic language-use scenarios—content related to their own discipline, or productive tasks transferable to job seeking.

For the enjoyment-dominant profile, maintaining the status quo is optimal; the risk to guard against is migration toward the dual-high profile as the year of study advances.

5.5. Limitations and Future Research

Several limitations should be acknowledged. First, the cross-sectional design cannot establish the causal direction between emotional configurations and outcomes. The association between profiles and achievement may reflect emotions shaping achievement, achievement shaping emotions in reverse, or reciprocal causation. Future research should adopt cross-lagged panel designs to examine the stability of profiles and the pathways of transition. Second, all indicators were self-reported; although Harman's test served as a preliminary screen, common method bias cannot be entirely excluded. Future studies could incorporate classroom observation, physiological indices, or teacher ratings as multi-source data. Third, the sample was drawn from three universities in eastern China, limiting the representativeness of institutional tier and region; generalisation to institutions in central and western China or to vocational colleges requires caution. Fourth, the present study used the three FLE dimensions and the FLCA total score as classifying indicators and did not include newly prominent emotions such as foreign language boredom and burnout. Existing research suggests finer differentiation within the emotion family under the control-value framework, and incorporating additional emotions as profile indicators may reveal configurations that the present study could not capture.

6. Conclusion

Drawing on 1,086 Chinese non-English-major undergraduates and employing latent profile analysis to examine the combinatory forms of foreign language enjoyment and classroom anxiety, this study reaches three conclusions.

First, learners' emotional experience assumes four interpretable configurations—dual-high (14.2%), enjoyment-dominant (38.6%), anxiety-dominant (30.1%), and dual-low (17.1%). Emotional heterogeneity is structural, not measurement noise.

Second, enjoyment and anxiety do not stand in a zero-sum relation. The dual-high learners, comprising one seventh of the sample, hold high enjoyment and high anxiety simultaneously; their anxiety is indistinguishable from that of the anxiety-dominant profile, yet their achievement and engagement occupy an upper-middle position. The aggregate negative correlation ($r = -.41$) is contributed mainly by between-group differences and cannot be generalised to within-individual relations.

Third, configurations are associated with both outcomes and year of study. The enjoyment-dominant profile shows the best achievement and engagement, the dual-low profile the lowest engagement, and the anxiety-dominant profile the lowest achievement. Second-year students are significantly more likely than first-year students to fall into both the anxiety-dominant and the dual-high profiles, indicating that pressure situations produce divergence rather than unidirectional deterioration.

Accordingly, emotional support in the foreign language classroom should not rest on the binary choice between "raising enjoyment" and "lowering anxiety," but should be designed in layers according to learners' emotional configurations. Identifying who is bearing "high anxiety masked by high enjoyment" is as urgent as helping who is trapped in "low engagement masked by low anxiety."

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