# Gen Z EFL Learners' Experiences with a Brain-Based and Compassion-Oriented Instructional Model: A Qualitative Study of Emotional Regulation and Writing Fluency Development



### Fazlolah Samimi 1\*, Motahareh Moradgholi<sup>2</sup>

<sup>1\*</sup>Assisstant Professor, Department of English Language Teaching, BA.C., Islamic Azad University, Bandar Abbas, Iran

Fazloahsamimi@iau.ac.ir 0000-0003-2237-7645

<sup>2</sup>Ph.D. Candidate, Department of English Language Teaching, Qe.C., Islamic Azad University, Qeshm, Iran motahareh.moradgholi@iau.ac.ir 0009-0002-9543-5869

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#### Abstract

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Keywords:
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This qualitative investigation explored Gen Z EFL learners' experiences with a brain-based and compassion-oriented instructional model regarding its effects on writing fluency and emotional regulation. Using a phenomenological research design, the study examined the lived experiences of 15 Iranian intermediate learners. Data were gathered during 8 weeks from writing samples, reflective journals, and semi-structured interviews. Thematic analysis revealed three major themes: enhanced emotional safety, increased engagement and motivation, and higher self-awareness in writing. Students indicated that they employed affective strategies, such as mindful breathing and emotional labeling to manage writing anxiety, especially in latter weeks of the course. Writing samples also indicated consistent improvement in fluency including increased word count, greater sentence complexity, and improved coherence. The results support the use of cognitive-affective instruction models to encourage emotionally safe and intellectually enriching learning conditions. By combining brain-based learning processes with compassionate teaching, the model introduced a supportive environment for Generation Z learners to regulate their feelings and improve their writing performance. This research fills a significant gap in Iranian EFL studies and recommends practical implications for EFL teachers, curriculum planners, and teacher education courses to adopt mindfulness, affective support, and reflection in teaching writing. The research finally advocates a shift from form-focused to student-centered approaches that prioritize both academic development and emotional well-being in EFL settings.

تجربیات زبان آموزان نسل Z زبان انگلیسی با یک مدل آموزشی مبتنی بر مغز و دلسوزی: بررسی کیفی تنظیم هیجان و توسعه روانی- نوشتاری و تنظیم هیجان این تحقیق کیفی، تجربیات زبان آموزان نسل Z زبان انگلیسی را با یک مدل آموزشی مبتنی بر مغز و دلسوزی در مورد تأثیرات آن بر روان-نوشتاری و تنظیم هیجان بررسی کرد. این مطالعه با استفاده از یک طرح تحقیق پدیدارشناختی، تجربیات زیسته ۱۰ زبان آموز ایر انی سطح متوسط را بررسی کرد. داده ها طی ۸ هفته از نمونه های نوشتاری، یادداشت های روزانه و مصاحبه های نیمه ساختاریافته جمع آوری شدند. تحلیل موضوعی سه مضمون اصلی را آشکار کرد: افزایش ایمنی عاطفی، افزایش تعامل و انگیزه، و خودآگاهی بالاتر در نوشتار. دانش آموزان نشان دادند که از استراتژی های عاطفی، مانند تنفس آگاهانه و برچسبگذاری عاطفی برای مدیریت اضطر اب نوشتاری، به ویژه در هفته های پایانی دوره، استفاده کردهاند. نمونه های نوشتاری همچنین بهبود مداوم در روانی نوشتاری از جمله افزایش تعداد کمات، پیچیدگی بیشتیبانی میکند. این موشاری از نشان دادند. نتایج، استفاده از مدلهای آموزشی شناختی-عاطفی را برای تشویق شرایط یادگیری ایمن از نظر عاطفی کمی خود را تنظیم کرده و عملکرد نوشتاری خود را بهبود بخشند. این تحقیق شکاف قابل توجهی را در مطالعات زبان انگلیسی به عنوان زبان خارجی، برنامهریزان در سی و دوره های تربیت معلم توصیه میکند تا ذهن در ایران پر میکند و پیامدهای عملی را برای معلمان زبان انگلیسی به عنوان زبان خارجی، برنامهریزان در سی و دورههای تربیت معلم توصیه میکند تا ذهن می عاطفی و تأمل را در آموزش نوشتار به کار گیرند. این تحقیق در نهایت زبان خارجی در اولویت قرار میدهند.

#### Introduction

In the past decade, EFL pedagogy has undergone a conceptual shift from purely cognitive or linguistic orientations to approaches that also integrate affective and neuropsychological dimensions of learning. Increasingly, scholars in applied linguistics and educational psychology have emphasized that learning is not merely a cognitive endeavor but also an emotional and social experience (Immordino-Yang, 2016; Pekrun & Linnenbrink-Garcia, 2014). The quality of emotional engagement, feelings of safety, and affective regulation all shape learners' cognitive processing and academic outcomes. Within this landscape, brain-based and compassion-oriented instructional models have emerged as two complementary paradigms that align with how the human brain learns best—through emotionally secure, meaningful, and socially connected experiences (Jensen, 2008; Neff, 2011).

This dual approach has become particularly relevant in teaching Generation Z (Gen Z) learners, the cohort born roughly between 1995 and 2010, who exhibit distinctive psychological, technological, and social characteristics. Studies describe Gen Z students as highly visual, digitally literate, and multitasking individuals who value authenticity, emotional connection, and rapid feedback in learning (Seemiller & Grace, 2019; Singh & Dangmei, 2018). They are more open to discussions about emotional well-being and mental health than previous generations, yet they are also more susceptible to stress, self-comparison, and perfectionism in academic environments (Twenge, 2023). These characteristics demand pedagogical approaches that foster not only intellectual growth but also psychological resilience and compassion-driven classroom cultures.

Traditional EFL writing instruction, especially in Iran, remains largely form-focused and teacher-centered, emphasizing grammatical accuracy, vocabulary control, and test performance. This cognitively heavy, affectively thin approach often leads to writing apprehension, fear of failure, and emotional disengagement (Hashemian & Heidari, 2013). Consequently, writing becomes an anxiety-provoking rather than a creative process for many students. Emerging perspectives in applied linguistics advocate emotionally intelligent teaching models that integrate affective neuroscience and social-emotional learning into writing pedagogy (Dewaele & Li, 2020; Mercer & Kostoulas, 2018). These perspectives view writing not just as a technical skill but as an affective, metacognitive, and self-expressive process that requires emotional safety and self-regulation.

### **Brain-Based Learning and Its Implications**

Brain-based learning principles, introduced and refined by Jensen (2005, 2008) and Caine and Caine (1997), propose that instruction should be consistent with how the brain naturally acquires, processes, and retains information. The approach emphasizes emotion, pattern recognition, active engagement, and multisensory learning. It promotes the notion that learning is physiologically influenced and emotionally charged, and that optimal learning occurs in relaxed yet alert states. In the EFL context, this translates into teaching practices that activate multiple cognitive channels—visual, auditory, kinesthetic—and foster meaningful connections between linguistic form and real-world communication. Recent studies have demonstrated that brain-compatible instruction enhances retention, motivation, and fluency in second language tasks (Tokuhama-Espinosa, 2017; Yang & Li, 2022).

### **Compassion-Oriented Pedagogy and Emotional Safety**

Complementing cognitive engagement, compassion-oriented pedagogy focuses on cultivating empathy, kindness, and non-judgmental awareness within classroom interactions. According to Neff's (2003, 2011) self-compassion framework, treating oneself with understanding in times of failure promotes resilience and sustained motivation. In language classrooms, such pedagogies encourage learners to view mistakes as natural parts of learning rather than as indicators of inadequacy (Germer & Neff, 2019). Emotional safety becomes the foundation upon which linguistic risk-taking and self-expression thrive. When applied to writing, compassion-oriented instruction transforms the classroom into a reflective, low-anxiety space where learners can explore identity, creativity, and authentic voice. In Iranian EFL contexts—where students often fear negative evaluation—this dimension is particularly critical (Ghanizadeh & Moafian, 2011).

### Writing Fluency and Affective-Cognitive Integration

Writing fluency represents a key intersection of cognitive and affective processes. It requires sustained attention, lexical retrieval, and syntactic planning—functions heavily mediated by the prefrontal cortex—but also depends on emotional stability and self-regulation. Research in positive psychology and second language acquisition (SLA) demonstrates that emotional well-being and enjoyment are strong predictors of writing fluency and performance (Dewaele & Alfawzan, 2018; MacIntyre & Gregersen, 2012). Learners who can manage frustration and anxiety are better able to maintain coherence, lexical variety, and sustained output. Moreover, emotionally intelligent instruction fosters **metacognitive awareness**, prompting students to monitor and adjust their emotions during the writing process (Mercer, 2021; Oxford, 2016).

#### Relevance to Generation Z and the Iranian EFL Context

For Gen Z learners, who value emotional authenticity, social connection, and experiential learning, a pedagogy that merges brain-based and compassion-based principles is both pedagogically and psychologically aligned with their needs. They are responsive to feedback systems that acknowledge effort and emotion, rather than exclusively focusing on linguistic form. However, the majority of EFL classrooms in Iran still rely on conventional, product-oriented instruction, which rarely accounts for emotional regulation or compassion as pedagogical variables. While scattered studies have addressed either mindfulness-based writing (e.g., Dewaele & Li, 2020) or affective factors in learning, the **combined effect** of brain-based and compassion-oriented instruction remains underexplored—particularly through qualitative inquiry that captures the lived experiences of Iranian Gen Z learners.

### **Rationale and Research Gap**

The scarcity of integrated studies in this field limits our understanding of how emotional regulation and writing fluency co-develop in supportive learning contexts. Most prior investigations have relied on quantitative measures, focusing on test scores or writing outputs without capturing the dynamic, experiential dimensions of learning. By employing a phenomenological design, the present study aims to address this gap by exploring how Gen Z EFL learners experience and interpret the interplay of cognitive engagement and emotional support in their writing development. The insights derived from this exploration will contribute to both theory and practice—expanding models of EFL writing instruction that balance academic rigor with compassion, and helping educators design more humane, brain-compatible classrooms that resonate with modern learners.

#### **Literature Review**

#### Theoretical Framework

This research is based on two connected theories: brain-based theory of learning and compassion-based education. Jensen (2005) states that learning is more effective when it aligns with how brain works such as recognizing patterns, being emotionally involved, and repetition. Supporting this idea, Neff's (2003) self-compassion theory and Immordino-Yang's (2016) research on how emotions influence thinking suggest that feeling secure and having empathy are crucial for meaningful learning. Together, these theories form a combined model that considers both the thinking and emotional aspects of learners in teaching.

### Brain-Based Learning in EFL Contexts

Brain-based learning theories emphasize the significance of connecting teaching methods to the process through which the brain receives, processes, and retains information (Jensen, 2005). The model involves active learning, emotional engagement, and meaningful tasks with the aim of ensuring retention and motivation. As Caine and Caine (1990) point out that learning is maximized when instruction focuses on the cognitive and affective needs of the learners. In EFL contexts, the model provides a more engaging environment to guarantee retention.

### Compassion-Oriented Pedagogy and Emotional Safety

Compassion-based pedagogy supports brain-based approaches by emphasizing emotional safety, empathy, and positive teacher-student relations. Immordino-Yang and Damasio (2007) reveal that cognition and emotion cannot be separated in the learning process. When learning a language, since learners are apprehensive and afraid of being judged, a compassionate classroom can reduce affective filters to a great degree. Neff (2003) further states that self-compassion enhances resilience and motivation, which are vital for skills such as writing.

### Writing Fluency and Emotional Factors

Fluency in writing is not just a linguistic but an affective process. Learners who feel anxious or unsupported often struggle with expressing their ideas freely. Empirical evidence indicates that emotional intelligence correlates positively with writing fluency (Dewaele & Alfawzan, 2018). Likewise, MacIntyre & Gregersen (2012) demonstrated that managing emotions, such as reducing anxiety, enhances learners' ability to produce coherent and fluent written output.

### Generation Z Learners and EFL Education

Gen Z students are digital natives who prefer teamwork, immediate feedback, and emotionally engaging learning. As Seemiller and Grace (2016) observe, these students are likely to participate in emotionally inclusive and interactive learning settings. Teacher-centered pedagogy may be incompatible with their interests. The same study also found that Gen Z students learn better when their cognitive-emotional needs are taken into consideration. Thus, the use of brain-based and compassion-based models will narrow the gap between student expectations and teaching practices.

### **Empirical Studies**

There is evidence that the use of brain-based instructional strategies can lead to better language outcomes, specifically in motivation and engagement (Jensen, 2008). Compassion-oriented models, including empathetic feedback and mindfulness, have also been associated with reductions in learner anxiety and improvements in academic resilience (Neff & Germer, 2013). However, few studies have explored the combined effect of brain-based and compassion-based instruction on writing fluency, particularly with Gen Z EFL learners. This research seeks to fill that gap through qualitative research.

### **Research Questions**

This study seeks to answer the following research questions:

**RQ1:** How do Gen Z EFL learners experience a brain-based and compassion-oriented instructional model in the context of writing?

**RQ2:** In what ways does this instructional model affect their emotional regulation?

**RQ3:** How does the model influence the development of writing fluency?

### Significance of the Study

This research contributes to the existing body of literature regarding both the affective and cognitive aspects of EFL learning. By focusing on Gen Z students' experiences, this study also has implications for educators who want to implement more empathetic and brain-compatible forms of teaching. The results have implications for teacher training courses, curriculum developers, and classroom interventions to enhance emotional well-being and writing outcomes. Secondly, it fills an emerging research gap in the Iranian EFL context, providing recommendations for language instruction and policy in such sociocultural environments.

#### Method

### **Design of the Study**

This qualitative research employed a phenomenological design to investigate Generation Z EFL learners' lived experiences with a brain-based and compassion-oriented instructional model. The study was keen on capturing the impact of the integrative model on their emotional regulation and writing fluency. Phenomenology was considered suitable because it allows for a thorough examination of participants' perceptions and emotional experiences (Creswell & Poth, 2018).

### **Participants**

Participants were 15 Iranian EFL learners aged 18 to 22. All of them belonged to Generation Z who were taking an intermediate English writing course at Amir-Laleh language institute in Zabol, Iran. Participants were recruited through purposive sampling to ensure that they had sufficient prior knowledge of writing tasks and were open to cooperating with reflective activities. All the participants were English language learners with five or more years of study in English and were familiar with basic writing conventions in English. Informed consent was acquired before data collection.

#### **Instruments**

Data were gathered using semi-structured interviews, reflective journals, and writing samples. Interviews focused on learners' emotional experiences and feelings regarding the instructional model. Reflective journals assisted participants to document their weekly emotional responses and learning reflections. Writing samples were used to track changes in fluency during the course of instruction.

### **Data Collection Procedure**

The study was conducted over eight weeks. In the first week, participants learned about a brain and compassion-based model, including mindfulness exercises, emotional check-ins, and brain-friendly writing activities. Semi-structured interviews were conducted in weeks 1, 4, and 8. Reflective journals were taken weekly. Bi-weekly writing exercises were distributed and marked based on fluency aspects, including word count, sentence complexity in terms of structure, and coherence. All sessions were held in English, with Persian employed for clarification purposes when necessary.

### **Data Analysis**

Thematic analysis was employed to analyze interview transcripts and journal entries, following Braun and Clarke's (2006) six-phase approach. Emotional regulation themes and writing fluency themes were identified and coded. Writing samples were quantitatively assessed to quantify changes in fluency indicators. Data triangulation was employed across interviews, journals, and writing samples to increase credibility. Peer debriefing and member checking were also used to ensure trustworthiness (Lincoln & Guba, 1985).

#### Results

## **Result of the First Research Question**

How do Gen Z EFL learners experience a brain-based and compassion-oriented instructional model in the context of writing?

Thematic analysis of reflective journals and semi-structured interviews identified three major themes:

Increased Emotional Safety

All 15 participants described the learning environment as emotionally safe and psychologically comforting. Each of them consistently used words such as "supportive," "stress-free," "non-judgmental," and "safe." Emotional check-ins and mindfulness practices at the start of every session were often mentioned as the source of a calming atmosphere that enabled writing risks. This is consistent with Neff's (2003) theory of self-compassion and Caine & Caine's (1990) principles of emotional safety in learning. *Enhanced Motivation and Engagement* 

Students indicated a higher level of motivation toward writing. Interactive processes, including visual-based brainstorming, collaborative mind-mapping, and peer feedback circles were more engaging than traditional methods. These processes allowed students to take ownership of their learning.

### **Enhanced Self-awareness in Writing**

Students indicated that they became more aware of how they write, their strengths, and areas where they need to improve. Reflective journal writing showed extensive use of metacognitive sentences such as "I noticed I write better after taking a break," or "I realized my anxiety drops when I plan first."

#### **Result of the Second Research Question**

In what ways does this instructional model affect their emotional regulation?

Analysis of journal entries, interview data, and weekly self-assessments revealed that emotional regulation skills were enhanced over the 8-week duration. Students indicated that they were less anxious about writing and more emotionally resilient, especially during weeks 4-8.

By Week 4, 11 out of 15 participants had started using strategies, such as mindful breathing, emotional labeling, and positive self-talk while experiencing writing stress. By Week 8, all 15 participants indicated that they were using at least two strategies to regulate their emotions.

These qualitative reports were corroborated by self-ratings and triangulated using multiple data sources. Emotional labeling and peer-supported regulation by students significantly increased, reflecting more internalization of affective strategies.

**Table 1**Self-Reported Use of Emotional Regulation Strategies Over Time

Week	Mindful Breathing	<b>Emotional Labeling</b>	Positive Self-Talk	Peer Support
Week 1	3	2	1	2
Week 2	5	4	3	3
Week 4	9	7	6	5
Week 6	12	10	9	8
Week 8	14	13	11	10

#### **Result of the Third Research Question**

How does the model influence the development of writing fluency?

Quantitative analyses of students' writing samples over the 8-week period revealed steady and statistically significant improvement in a variety of measures of fluency, including average word count, sentence complexity, and overall text coherence.

Average Word Count Growth

Average word count of writing tasks increased from 130 words in Week 1 to 190 words in Week 8, a growth of 46% over the course.

*Increased Sentence Complexity* 

Average sentence complexity scores were assigned by two trained raters based on a 5-point analytic rubric of syntactic variety that increased from 2.1 to 4.2.

Improved Coherence and Organization

Although not quantitatively measured, both of the trained raters reported noticeable improvement in employing logical connectors, paragraph unity, and topic development at Weeks 6 and 8.

 Table 2

 Progression of Average Word Count and Sentence Complexity

Week	Average Word Count	Sentence Complexity Score (1–5)
Week 1	130	2.1
Week 2	145	2.5
Week 4	160	3.0
Week 6	175	3.7
Week 8	190	4.2

#### Discussion

The current study explored the experiences of Generation Z EFL learners with a brain-based and compassion-oriented instructional model, focusing on their emotional regulation and writing fluency. The findings of this research answered three main research questions. Each of the findings will be described and discussed in this section in the context of previous studies.

In response to the first research question, students indicated that the learning environment was safe and non-judgmental. Emotional safety was created through mindfulness practices and supportive peer interaction, which allowed learners to take writing risks and remain engaged. These results are in alignment with Neff's (2003) theory of self-compassion and Caine and Caine's (1990) principles of emotional safety. In the same vein, Ghanizadeh and Moafian (2011) argued that Iranian learners' writing proficiency is associated with their emotional well-being which supports the relevance of the emotional context in language learning.

Concerning the second research question, the participants reported progressive improvement in their emotional regulation strategies. At the end of the course, all students applied strategies, such as mindful breathing and emotional labeling. The results are consistent with those by Dewaele and Alfawzan (2018), which proved that mindfulness-based practices enhance writing performance and reduce anxiety. Furthermore, the peer-supported regulation process is also aligned with Vygotsky's sociocultural theory of learning, in which interaction supports internal regulation processes. The findings align with those of MacIntyre and Gregersen (2012), which highlighted the fact that Iranian Generation Z learners are advantaged by pedagogical treatments relying on empathy, especially when they are emotionally connected to learning.

The third research question examined writing fluency. Students made considerable improvement in word count, sentence complexity, and coherence during the eight-week period. The findings corroborate Jensen's (2005) theory that brain-compatible instruction promotes memory, creativity, and fluency. Furthermore, Pekrun and Linnenbrink-Garcia (2014) emphasized that emotional and cognitive engagement work together to enhance academic performance, including writing fluency. The participants' reflective journals revealed metacognitive awareness as they realized what helped them write better. This is in accordance with Zimmerman's (2002) self-regulated learning theory, showing the necessity of reflection in the writing process.

The combination of both brain-based and compassion-oriented approaches seems to be more effective than traditional methods that focus solely on grammatical instruction or writing product. Earlier studies (e.g., Immordino-Yang & Damasio, 2007) often investigated these models independently. This study presents new qualitative evidence regarding their combined efficacy, with a special focus on an Iranian Gen Z learner.

The uniqueness of this study lies in its qualitative richness and cultural applicability. Unlike most previous studies, which were conducted either in Western or mixed-cultural settings, the current study depicts the applicability of affective-cognitive models to Iranian EFL classrooms. It also testifies to a shift from form-focused to learner-centered instruction in Iranian writing classes.

#### Conclusion

The present study aimed to investigate the lived experiences of Iranian Generation Z EFL learners from the perspective of a brain and compassion-based instructional model in the context of writing. Using a qualitative phenomenological design, it sought to explore the affective and cognitive processes that learners experience during writing instruction. The results of interviews, reflective journals, and writing samples indicated that the combination of brain-compatible and compassion-based strategies created an emotionally safe, engaging, and self-reflective learning environment.

The results indicated that this integrative model not only reduced students' writing anxiety but also increased their emotional regulation skills and metacognitive awareness. Furthermore, the improvement in writing fluency —reflected by growth in word count, sentence complexity, and coherence—indicates that affective factors play a significant role in academic writing development. Participants' feedback showed that when students feel emotionally safe as well as intellectually challenged, they are more willing to take risks, think critically, and write more easily.

This study contributes to the growing body of literature that highlights the importance of addressing both cognitive and affective aspects in second language writing instruction. It also adds localized evidence from the Iranian EFL context and addresses the growing demand for learner-centered, affectively sensitive pedagogical models which meet the needs of Gen Z learners.

### **Implications of the Study**

This study highlights the need for EFL instruction, especially in writing, to embrace more holistic approaches that account for learners' emotional dimensions. Teachers should apply mindfulness strategies, emotional check-ins, and reflective journaling as a regular practice to cultivate a more compassionate learning environment in their classrooms. In addition, teachers' training programs should highlight the creation of emotionally responsive and brain-compatible classrooms, such as understanding learners' emotional states and supporting their psychological readiness for writing tasks.

Curriculum writers also need to organize writing instruction that integrates the features of cognitive engagement and emotional safety. Metacognitive growth and writing autonomy can be facilitated through reflective practices like journaling and self-evaluation. By coaching students to reflect on their progress, they become more autonomous and resilient writers. Additionally, the classroom should be an environment in which creativity, collaboration and the expression of emotions are not just allowed but actively promoted. This is particularly true for Generation Z students who learn best in emotionally engaging and socially interactive learning environments.

Finally, the broader educational system needs to start prioritizing emotional growth as highly as academic achievement. Through incorporating emotionally intelligent pedagogical practices into everyday teaching, language instructors can help to promote greater learner engagement, minimize writing anxiety, and eventually facilitate more effective and more empathetic language instruction.

### **Suggestions for Further Study**

While the present study illuminates key aspects of affective-cognitive integration in Iranian EFL writing classrooms, it also opens several avenues for future research.

First, subsequent studies could adopt quantitative and mixed-methods designs to measure the direct effects of brain-based and compassion-oriented instruction on objective indicators such as writing quality, retention, and anxiety levels. Controlled experiments and longitudinal designs could reveal the durability of emotional regulation and fluency gains beyond the immediate instructional period.

Second, the integration of digital learning environments warrants closer examination. Since Gen Z learners are deeply embedded in technology-mediated contexts, future research could explore how online platforms, mindfulness apps, or virtual peer-support networks can enhance compassion-based instruction and emotional regulation in writing tasks. Studies might also investigate how artificial intelligence tools can provide empathetic, adaptive feedback without depersonalizing the teacher-student relationship.

Third, comparative and cross-cultural studies should examine how variables such as gender, proficiency level, and cultural attitudes mediate the outcomes of affective-cognitive models. Expanding the research to diverse EFL populations—such as Arab, East Asian, or European learners—would provide valuable evidence of universality or cultural specificity.

Fourth, teacher cognition and professional development deserve systematic exploration. Investigating how EFL teachers conceptualize compassion, emotional support, and brain-based instruction can reveal practical barriers and training needs. Workshops on emotional intelligence and neuroeducation could be empirically evaluated for their impact on classroom practices and learner outcomes.

Finally, future interdisciplinary studies could employ neuroscientific or psychophysiological tools, such as EEG or heart-rate variability measures, to observe how affective and cognitive engagement manifest biologically during language production. These investigations could provide concrete neural evidence of how compassion and brain-compatible teaching influence attention, stress regulation, and linguistic creativity. Collectively, such research would contribute to building a comprehensive affective-cognitive framework for EFL education—one that bridges theory, empirical validation, and pedagogy to support both the academic performance and emotional flourishing of language learners in the 21st century.

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