

Investigating the Integration of Emotional Engagement Principles in Middle School EFL Reading Instruction: A Survey of Teachers' Awareness and Classroom Practices

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Abstract:

Neuro-didactics positions emotion as a central biological driver of language acquisition. This study of 34 Algerian middle school EFL teachers reveals a “research–practice paradox”: strong belief in emotion’s role ($M = 4.18$, $SD = 0.85$) but limited training, with 85.3% reporting none. Although teachers adapt to students’ emotional states ($M = 3.79$), they struggle to find emotionally resonant texts ($M = 3.16$) within rigid curricula. Structural constraints such as overcrowding and time pressure further hinder deep learning, highlighting the need for evidence-based teacher education.

Keywords: Neuro-didactics, Emotional Engagement, EFL Reading, Middle School Pedagogy, Teacher Awareness, Affective Neuroscience.

الملخص:

تعتبر الديدانكتيك العصبية (تعليمية الأعصاب) العاطفة محركاً بيولوجياً أساسياً لاكتساب اللغة. تكشف هذه الدراسة، التي شملت 34 أستاذاً جزائرياً للغة الإنجليزية كلغة أجنبية في الطور المتوسط، عن → مفارقة بين البحث والممارسة: "حيث يوجد إيمان قوي بدور العاطفة (المتوسط الحسابي = 4.18، الانحراف المعياري = 0.85) يقابله تدريب محدود، إذ أفاد 85.3% من الأساتذة بعدم تلقيهم لأي تدريب في هذا المجال. وعلى الرغم من أن الأساتذة يتكيفون مع الحالات العاطفية للتلاميذ (المتوسط الحسابي = 3.79)، إلا أنهم يواجهون صعوبة في إيجاد نصوص ذات صدى عاطفي (المتوسط الحسابي = 3.16) في ظل مناهج دراسية صارمة. كما أن القيود الهيكلية، مثل الاكتظاظ وضيق الوقت، تزيد من إعاقة التعلم العميق، مما يسلط الضوء على الحاجة الملحة لتكوين الأساتذة بناءً على الأدلة والأسس العلمية.

الكلمات المفتاحية :

الديدانكتيك العصبية، التفاعل العاطفي، القراءة باللغة الإنجليزية كلغة

أجنبية (EFL)، بيداغوجيا الطور المتوسط، وعي الأستاذ، علم الأعصاب
الوجداني.

1. INTRODUCTION

Language instruction has evolved during the past 20 years. We are already shifting toward a more contemporary method known as "neuro-didactics," which is essentially applying our understanding of the human brain to enhance instruction. Researchers are focusing considerably more on how students' emotions impact their learning in this approach. According to scientific research, students' brains focus better, retain more information, and comprehend deeper meanings when they have an emotional connection to a lecture (Tyng et al., 2017). Feeling a personal connection to a tale might make it much easier for a learner to assimilate information because reading in a foreign language requires a lot of mental work. For this reason, examining "emotional engagement" in the EFL classroom is now an essential component of instruction rather than merely an "extra" task for teachers.

Reading is one of the most difficult subjects for kids in middle schools. The majority of pupils have low motivation, a lack of vocabulary, and a sense that the texts they read are unrelated to their everyday lives. All too frequently, we just consider these issues as "language weaknesses", ignoring the emotional component of a student's comprehension of a text (Dewaele, 2015).

From a brain-based point of view, thinking and feeling are

neurologically connected and not two distinct entities. It is neurobiologically difficult to form memories or make complicated judgments without emotion, as Immordino-Yang and Damasio (2007) famously argued. This means that by focusing kids' attention and motivating them to study, employing meaningful stories in the classroom and asking them how they feel about a character might actually make them smarter and active readers.

Despite all of this theory, what actually occurs in the classroom is frequently very different. Although researchers discuss the advantages of emotional engagement, there is a lack of information regarding how teachers in actual Algerian classrooms comprehend or apply these concepts. As a result, there is a "Research-Practice Gap." In fact, my recent data shows a major disconnect: while teachers believe emotions are important, 85.3% of them have never received any formal training in brain-based teaching.

There is a clear lack of documentation regarding what teachers actually think and do. Without this "diagnostic" information, any new training programs might fail because they don't understand the reality of the classroom (MacIntyre et al., 2019). This gap is very visible in middle schools, where students are at a critical age and desperately need more engaging ways to learn.

In Algeria, specifically, we lack studies that show how our teachers deal with these emotional factors. Because we don't have this data, it is hard to create a teaching framework that fits our specific schools and needs.

This study aims to fill that gap. We will investigate how

middle school EFL teachers in Algeria use emotional engagement by looking at their awareness, their beliefs, and the actual barriers they face such as large classes and limited materials. By collecting this "diagnostic" data, we can finally start building a way of teaching that is grounded in both science and the reality of the Algerian classroom.

Research questions:

The study is guided by the following research questions:

1. To what extent are middle school EFL teachers aware of emotional engagement principles and their role in reading comprehension?
2. What beliefs do teachers hold regarding the importance of emotional engagement in EFL reading instruction?
3. To what extent do teachers report implementing emotional engagement strategies in their reading classrooms, and what barriers do they perceive in doing so?

2.Literature Review

This section provides the theoretical framework for the study by exploring the intersection of neuroscience and English language pedagogy. It begins by defining the principles of neurodidactic research and the biological importance of the limbic system in the learning process. Furthermore, the discussion examines the role of affective factors in reading comprehension and the impact of cognitive load on student performance. By reviewing existing literature on emotional engagement, this discussion establishes the scientific basis for the diagnostic study and highlights the necessity of aligning instructional strategies with the neurological realities of the learner.

2.1. Understanding Neuro-didactics

Neuro-didactics is a relatively new field that combines neuroscience, psychology, and education, often referred to as the "MBE" (Mind, Brain, and Education) movement (Tokuhamu-Espinosa, 2011). Its main goal is to create teaching methods that "work with the brain, not against it" (Caine & Caine, 1994). In the past, language learning was seen as a purely logical task like memorizing grammar rules and vocabulary. However, modern research shows that the brain does not learn this way. Instead, as Cozolino (2013) argues, the brain is a "social organ" that needs emotional stimulation and interpersonal connection to function at its best.

2.2. The Limbic System: The Brain's Gatekeeper

To understand why emotions matter in an EFL reading class, we must look at how the brain processes information. Deep inside the brain is the limbic system, which includes the amygdala (the emotional center) and the hippocampus (the memory center). According to Willis (2007), the amygdala acts as a "switching station" or gatekeeper for information. When a student feels bored, stressed, or disconnected from a text, the amygdala can actually "block" information from reaching the prefrontal cortex that is the higher part of the brain where complex thinking and learning happen. This is often referred to as an "amygdala hijack" (Goleman, 1995). On the other hand, when a student feels curious, excited, or personally connected to a story, the brain releases neurotransmitters like dopamine. As Schumann (1997) explains, these chemical signals act as a "go" sign, making it much easier for the brain to encode, remember, and understand the material.

2.3. Emotional Engagement in Reading

Emotional engagement is more than just "having fun" in class. It refers to the complex spectrum of interest, boredom, happiness, or anxiety a student feels while interacting with a text (Saito et al., 2018). In an EFL context, reading is often difficult because the language is foreign and requires high mental effort. If the topic is boring or irrelevant to the student's life, they will likely experience "cognitive overload" (Sweller, 1988) that is a state where the brain's processing capacity is exhausted, causing the student to "switch off" and stop trying.

Researchers argue that for a student to truly understand a text, they need to have an affective reaction to it (Oatley, 1994). This could mean feeling empathy for a character, relating a story to their own life in Algeria, or feeling a sense of mystery about the plot. These emotions act as "hooks" or "attentional anchors" that pull the student deeper into the language, allowing for more efficient processing and long-term retention (Schumann, 1997).

2.4. The Teacher's Role and the Training Gap

Even though the science is clear, there is a major problem with how this is applied in schools. Most teachers are "pedagogically empathetic," meaning they naturally care about their students' feelings. However, researchers argue that "caring" is a personality trait, which is not the same as having a trained scientific strategy or "emotional intelligence" for the classroom (Gkonou & Mercer, 2017).

As our research shows, there is a significant Training Gap. Most EFL teachers in middle schools rely on their intuition or their "gut feeling", a concept known as "Teacher Cognition" (Borg,

2003). This happens because they have not been taught the formal principles of neuro-didactics. Without formal training, it is very difficult for a teacher to move beyond a friendly attitude and actually choose the right texts or design activities that specifically target the emotional centers of the brain. This results in a classroom where teachers want to engage students but lack the professional "tools" to do it effectively (Hattie, 2012).

3. Research Methodology

3.1. Research Design

This study uses a mixed-methods survey design. This means we collected two types of information: "quantitative" data (numbers) to see general trends, and "qualitative" data (written descriptions) to understand personal experiences. This approach is "diagnostic," identifying the real situation on the ground before suggesting new neuro-didactic solutions.

3.2. Validity of the questionnaire: The Pilot Study

To ensure the questionnaire was clear and effective for the Algerian context, we took two important steps before sharing it with the full group:

1. Expert Consultation: we consulted a middle school inspector to review the questions. This ensured that the language was appropriate for Algerian teachers and aligned with the national curriculum goals.

2. The Pilot Test: we tested the questionnaire with a small group of seven (7) middle school teachers. Their feedback helped me fix confusing terms and adjust the timing of the survey. Because of this pilot phase, the final data is much more reliable and accurate.

3.3. Participants and Setting

The final participants are 34 middle school EFL teachers (N=34) from the Algerian public school system. Most belong to the 25–34 age group, representing a younger generation of teachers. While they have high energy and pedagogical empathy, they often face the reality of large classes and a lack of resources.

3.4. Data Collection Instrument

The primary tool was an online questionnaire divided into three parts:

- **Background Information:** Focusing on teaching experience and training.
- **Likert-Scale Questions:** Teachers rated their agreement (from "Strongly Disagree" to "Strongly Agree") on beliefs about brain-based learning and their daily habits.
- **Open-Ended Questions:** Teachers described their own strategies (like storytelling) and the specific challenges they face.

3.5. Data Analysis:

We analyzed the data using two methods:

- **Descriptive Statistics:** Calculating the "mean" (average) to see, for example, the gap between what teachers believe (high scores) and the training they have received (low scores).
- **Thematic Analysis:** we organized the written answers into common "themes," such as "student shyness" and "time constraints," to get a human perspective on the data.

3.6. Ethical Considerations:

Participation was voluntary and anonymous. All data is kept confidential and used only for this academic research to ensure teachers could be honest about their classroom struggles.

This chapter presents the findings from the questionnaire and

discusses what they mean for the Algerian middle school classroom. By looking at both the numbers and the teachers' own words, we can see a clear picture of how emotions are handled in our schools.

4.Results and Discussion:

This chapter presents the findings derived from the survey data and provides an analytical discussion of their implications for the Algerian middle school context. The primary objective is to evaluate the current state of teacher awareness regarding neurodidactic principles and to identify the extent to which emotional engagement is operationalized in reading instruction. By synthesizing quantitative data with qualitative teacher insights, this section highlights the Research Practice Gap and explores the systemic barriers such as limited training and curriculum constraints that influence pedagogical choices. The following analysis serves as a diagnostic foundation for the recommendations proposed in the final chapter.

4.1. The Training Paradox:

The most striking finding of this study is the lack of formal preparation. As shown in (Figure 1), a massive 85.3% of the teachers surveyed have never received any formal training in neuro-didactics or brain-based teaching.

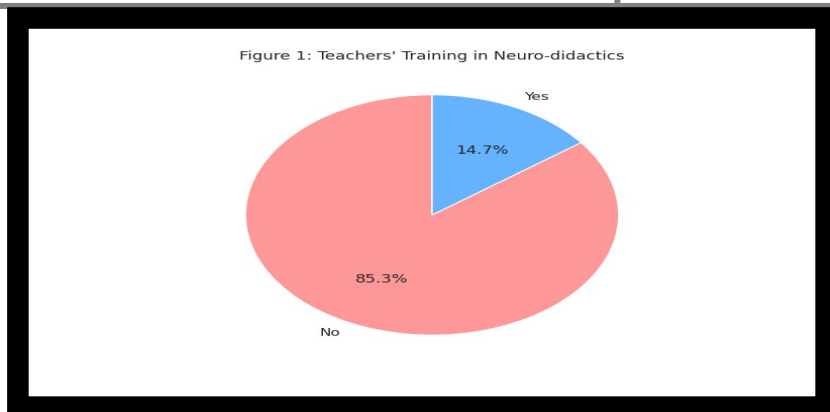


Figure 1: Teachers' Training in Neuro-didactics

This is what we call a "professional paradox." Most teachers are entering the classroom with modern ideas about students' well-being, but they haven't been given the scientific "how-to" guide. They are essentially teaching by heart and instinct, rather than by evidence-based strategies.

Building on this paradox, the data highlights a critical systemic gap in both pre-service and in-service teacher education. When educators are forced to rely primarily on intuition rather than structured didactic training, the field becomes highly vulnerable to the proliferation of "neuromyths"—oversimplified or scientifically inaccurate beliefs about how the brain learns. While a teacher's instinct regarding emotional engagement is an invaluable asset, the absence of formal didactic transposition means they lack the necessary theoretical frameworks to systematically design, implement, and assess brain-compatible learning environments. As a result, any application of neuro-didactic principles in these classrooms is likely incidental rather

than intentional.

4.2. High Belief vs. Practical Challenges

When we look at (Figure 2), we see that despite the lack of training, teachers strongly believe in the power of emotion. Most participants "Strongly Agree" or "Agree" that emotional engagement improves a student's ability to understand a text.

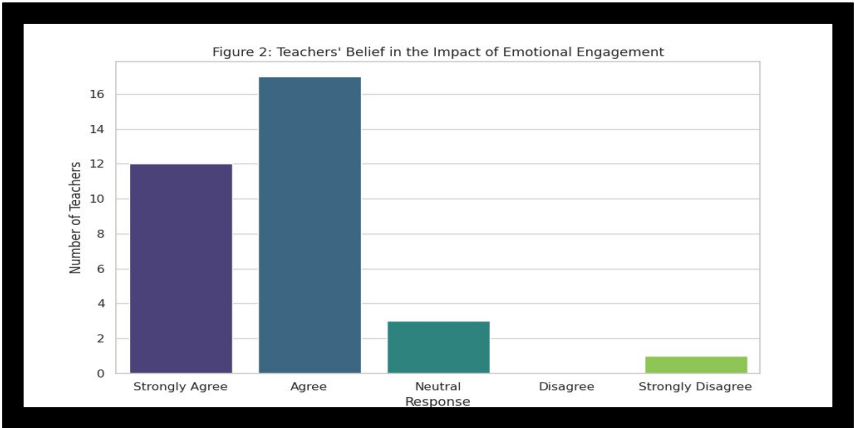


Figure 2: Teachers' Belief in the Impact of Emotional Engagement

This shows that Algerian teachers are already convinced that a happy, curious student is a better learner. However, believing in something is one thing, but doing it every day in a crowded classroom is another

Response	Number of Teachers
Strongly Agree	12
Agree	17
Neutral	3

Disagree	0
Strongly Disagree	1

Table 2: Teachers' Belief in the Impact of Emotional Engagement

The data in (Table 2) underscores a significant divergence between teachers' pedagogical beliefs and their situational realities. The overwhelming consensus—with 29 out of the 33 respondents agreeing or strongly agreeing—reflects a strong intuitive alignment with established frameworks, such as the cognitive-affective theory of learning or Krashen's Affective Filter Hypothesis, which posits that positive emotional engagement lowers barriers to comprehension. However, translating this epistemological stance into daily praxeology is severely hindered by environmental constraints. In the Algerian educational context, where overcrowded classrooms, time limitations, and rigid curricula are prevalent, teachers often experience a form of "didactic friction." They possess the pedagogical intuition that emotional resonance drives cognitive processing, but lack both the specialized neuro-didactic training (as evidenced in Table 1) and the structural support to systematically embed emotional hooks into their instructional design.

4.3. Classroom Reality: Adjusting on the Fly

Teachers are clearly trying their best to be responsive. (Figure 3) shows that many teachers "Always" or "Often" adjust their teaching based on how their students are feeling that day. If a

class seems tired or bored, the teacher tries to change the energy.

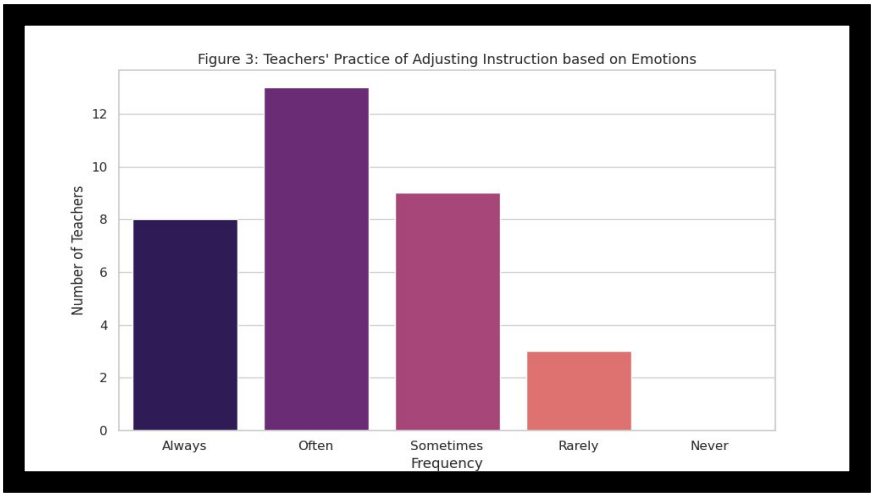


Figure 3: Teachers' Practice of Adjusting Instruction based on Emotions

This tells us that "pedagogical empathy" is very high among Algerian middle school teachers. They are paying attention to their students' faces and moods, which is the first step toward a brain-based classroom

Frequency	Number of Teachers
Always	8
Often	13
Sometimes	9
Rarely	3
Never	0

Table 3:Teachers' Practice of Adjusting Instruction based on

Emotions

The data presented in (Table 3) illustrates a strong capacity for in situ didactic regulation driven by affective cues. The fact that a significant majority of educators (21 out of 30 respondents in these categories) frequently adapt their instruction demonstrates a prevalent use of pedagogical empathy as a real-time classroom management tool. However, when juxtaposing these findings with the overwhelming lack of formal neuro-didactic training (Table 1), it becomes evident that this affective responsiveness is largely intuitive and reactive. Teachers are making ad-hoc, micro-level adjustments to the didactic contract to manage immediate classroom dynamics. While sensing and shifting the "energy" of a bored or fatigued classroom is a vital form of affective scaffolding, a fully realized neuro-didactic approach requires moving beyond merely reacting to student moods. The next evolutionary step for these educators is learning to proactively design didactic situations that intentionally cultivate and sustain the optimal emotional states required for deep cognitive processing.

4.4. The Problem with Materials

The biggest practical hurdle seems to be the reading materials themselves. (Figure 4) shows a much lower frequency for the use of "emotionally relevant reading texts." Many teachers reported only "Sometimes" or "Rarely" using texts that truly connect to the students' lives.

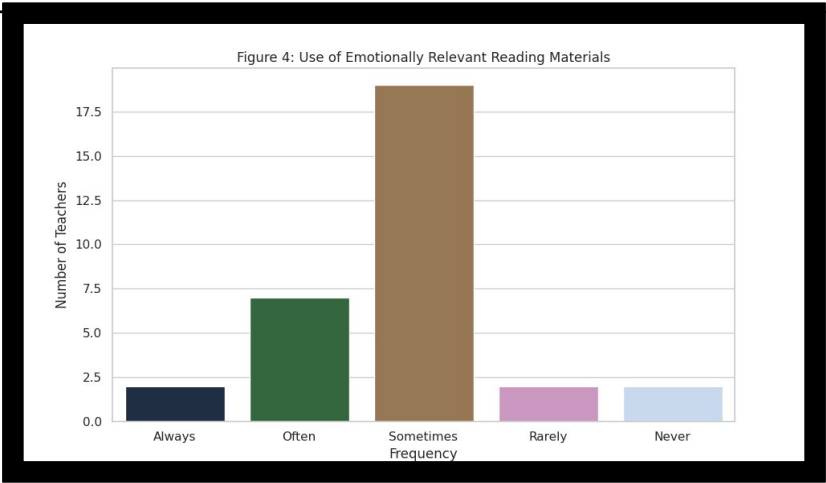


Figure 4: Use of Emotionally Relevant Reading Materials

In the open-ended responses, teachers explained why they feel "trapped" by the official textbook and the standardized curriculum. It is hard to find the time to search for extra stories or articles when they have so many lessons to finish before the exams. As one teacher noted, "The texts in the book are often too formal or distant from our students' daily reality in Algeria."

Frequency	Number of Teachers
Always	2
Often	7
Sometimes	19
Rarely	2
Never	2

Table 4:Use of Emotionally Relevant Reading Materials

The data in (Table 4) exposes the core structural limitation

preventing the full realization of neuro-didactic principles in the Algerian context: the rigidity of the prescribed curriculum. While teachers demonstrate high pedagogical empathy in their interpersonal interactions (Table 3), their capacity for internal didactic transposition—the process of adapting prescribed knowledge into teachable, engaging content—is severely restricted by institutional mandates. The heavy reliance on the official textbook, driven by the pressure of syllabus completion and the "washback effect" of standardized testing, forces educators to prioritize coverage over authentic, emotional resonance. Consequently, the materials often remain culturally or emotionally detached, which, from a neuro-cognitive perspective, fails to activate the students' affective networks essential for deep memory encoding. This highlights a profound systemic disconnect: teachers intuitively know how to engage students emotionally, but are largely deprived of the contextualized didactic tools and the professional autonomy required to anchor that engagement in the actual reading materials.

4.5. Discussion: The "Invisible" Barriers

Beyond the lack of materials, the qualitative data highlighted two major "invisible" barriers: student shyness and time constraints. Many teachers mentioned that even when they try to engage students emotionally, the students are often too shy to speak or express their feelings in English. This is especially true in middle school, where teenagers are very self-conscious.

Furthermore, the 60-minute session is often seen as too short to allow for deep emotional connection. Teachers feel they must

rush through the grammar and vocabulary to "finish the program," leaving little room for the kind of storytelling or personal discussion that brain-based learning requires.

In conclusion, the results show a clear "gap" in the Algerian middle school. We have empathetic teachers who believe in the science of the brain, but they are working in a system that doesn't yet provide the training or the flexible materials needed to make emotional engagement a reality. To bridge this gap, we don't just need better books, instead we need to empower teachers with specific neuro-didactic tools that work even in large, busy classrooms.

Conclusion and Recommendations:

1. Conclusion:

The journey of this research began with a simple question: Do we teach the subject or do we teach the student? Through our "diagnostic" study of 34 Algerian EFL teachers, the answer is clear. Teachers desperately want to focus on the student's emotional world, but they lack the professional compass to do so.

Our findings reveal a significant "Research-Practice Gap." While almost every teacher surveyed believes that emotions are the "fuel" for reading comprehension, the vast majority (85.3%) are navigating this without any formal training in neuro-didactics. We see a generation of teachers who are "pedagogically empathetic". They notice when a student is bored or shy, yet they are constrained by a rigid curriculum and a lack of emotionally resonant materials.

In the Algerian context, the challenges of large classes and limited time often turn the classroom into a space of "stress"

rather than "discovery." However, the high levels of teacher belief and their natural instinct to adjust lessons based on student moods provide a strong foundation. While pedagogical empathy is already present in the classroom, there is a clear necessity to reinforce these natural instincts with evidence-based neuro-didactic strategies.

2. Recommendations:

Based on the data collected, we propose the following recommendations to help move EFL reading instruction from a purely cognitive task to a neuro-didactic experience:

1. For Teacher Training (The Ministry of Education):

- Introduce "Neuro-literacy": Professional development seminars should include basic training on the "limbic system" and how stress blocks learning. Teachers need to know why a shy student cannot process a complex text so they can create "low-stress" environments.
- Practical Workshops: Instead of theoretical lectures, training should focus on "how to prompt" emotional responses and how to use storytelling as a biological hook for memory.

2. For Curriculum Designers:

- Flexible Reading Materials: The national textbooks should include more "human-interest" stories that relate to the lives of Algerian teenagers. When students see their own emotions and culture reflected in a text, their brain's "affective filters" open up, making language acquisition much faster.
- Integrated Emotional Tasks: Reading comprehension activities should move beyond "True/False" questions. We need more "Personal Reaction" questions that ask students: "How

would you feel in this situation?"

3. For Classroom Teachers:

- Small Wins: Even with large classes, teachers can use "mini-engagements", like a (2-minute) personal story before a reading or using expressive gestures.
- Create a "Safe Space": Since shyness was a major barrier, teachers should prioritize building a classroom culture where "making a mistake" is seen as a natural part of the emotional learning process.

Final Thought:

We must fundamentally remember that the brain does not learn if it does not feel; emotion is not a distraction from cognitive processing, but the very foundation upon which it is built. As this study has demonstrated, Algerian middle school teachers already possess a profound "pedagogical empathy," instinctively recognizing that a positive affective climate is the gateway to effective language acquisition. However, relying solely on this intuition is no longer sufficient.

By actively aligning our teaching practices with the neurological realities of our students, and by formally integrating neuro-didactic principles into teacher training programs, we can empower educators to become intentional designers of brain-compatible learning. We can transition the Algerian EFL classroom from a site of traditional, often rigid instruction-constrained by culturally distant materials and didactic friction-to a dynamic environment of meaningful interpersonal connection.

Ultimately, the future of our educational system depends on adopting a holistic approach that inextricably links the cognitive demands of the curriculum with the affective needs of our learners. When policymakers, curriculum developers, and teachers work in tandem to prioritize emotional relevance alongside linguistic competence, we will not merely improve English proficiency test scores. We will foster a generation of resilient, deeply engaged, and intrinsically motivated Algerian students.

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