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FROM FLUENCY TO FLOURISHING: APPLYING NEUROHEART EDUCATION IN CONTEMPORARY EFL INSTRUCTION

ВІД МОВНОЇ КОМПЕТЕНТНОСТІ – ДО ГАРМОНІЙНОГО РОЗВИТКУ ОСОБИСТОСТІ: ВПРОВАДЖЕННЯ НЕЙРООСВІТИ У СУЧАСНУ МЕТОДИКУ ВИКЛАДАННЯ АНГЛІЙСЬКОЇ МОВИ ЯК ІНОЗЕМНОЇ

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In the evolving landscape of Education 5.0, the role of English as a Foreign Language (EFL) teaching is expanding beyond linguistic competence to embrace emotional intelligence, learner autonomy, and holistic human development. This article explores the integration of Rachel Paling's NeuroHeart Education methodology into contemporary EFL instruction. Rooted in neuroscience, emotional intelligence theory, and educational psychology, the NeuroHeart model redefines the teacher as a coach, co-learner, and emotional guide. It aligns with five key pedagogical approaches – constructivist, collaborative, inquiry-based, integrative, and reflective – ensuring that teaching is cognitively rigorous, emotionally attuned, and learner-centred.

Drawing on recent research in educational neuroscience, this article highlights how heart-brain coherence, stress reduction, and trust-building enhance classroom engagement and learning outcomes. The study reflects on real-life classroom experiences in Yuriy Fedkovych Chernivtsi National University (Dept. of Modern Foreign Languages & Translation Studies) educational contexts during wartime, illustrating how trauma-sensitive, emotionally safe environments promote psychological resilience and communicative competence. Through the lens of peer teaching and learner reflections, the article demonstrates how NeuroHeart Education fosters agency, empathy, and critical thinking, transforming grammar learning and translation practice into meaningful, co-constructed experiences. The findings suggest that by incorporating brain-friendly strategies, educators can help students flourish in fluency, identity, social connection, and lifelong learning.

The study concludes that emotionally intelligent pedagogy is no longer a pedagogical luxury but a necessity. NeuroHeart Education, when aligned with Education 5.0 values, offers a robust, future-facing model that blends science and soul-guiding learners and educators toward resilience, fulfilment, and growth.

Key words: NeuroHeart Education, EFL, Education 5.0, emotional intelligence, heart-brain coherence, peer teaching.

У сучасному швидкоплинному освітньому ландшафті 5.0 роль викладача англійської мови як іноземної (EFL) зазнає докорінних змін. Виходячи за межі традиційної парадигми трансляції контенту, викладачі дедалі частіше виступають фасилітаторами, які співворюють емоційно безпечне, когнітивно стимулююче та глибоко студенто-центричне навчальне середовище. У статті досліджується можливість інтеграції методології NeuroHeart – новаторської концепції, розробленої Рейчел Пейлінг, у сучасну методику викладання англійської мови. Ця модель, що ґрунтується на досягненнях нейронауки, психології освіти та теорії емоційного інтелекту, переосмислює роль викладача як тренера, співучасника навчального процесу та емоційного наставника.

Методологія NeuroHeart гармонійно поєднується з п'ятьма ключовими педагогічними підходами: конструктивістським, колаборативним, дослідницьким, інтегративним та рефлексивним. У центрі уваги – навчальне середовище, що підтримує емоційну безпеку, знижує стрес, розвиває критичне мислення та зміцнює довіру між учасниками освітнього процесу.

Застосування цієї методики на Кафедрі сучасних іноземних мов та перекладу Чернівецького національного університету імені Юрія Федьковича в умовах війни засвідчило її потенціал у формуванні емоційної стійкості, мовної самореалізації та громадянської свідомості. Студентські рефлексії підкреслюють високий рівень мотивації, довіри та внутрішнього зростання, які виникають унаслідок взаємонавчання й емоційно забарвленого досвіду.

Авторка доходить висновку, що впровадження NeuroHeart-підходу не лише збагачує традиційне EFL-навчання, а й гармонійно поєднує науковість із душевністю, відкриваючи шлях до нової парадигми викладання – цілісної, співчутливої, адаптивної та трансформаційної.

Ключові слова: нейроосвіта, емоційний інтелект, англійська мова як іноземна, освіта 5.0, метод «рівний-рівному», нейро-серцева когерентність.

Dedicated to the 150th anniversary of Yuriy Fedkovych Chernivtsi National University

"Preserving our traditions, developing innovations." A guiding vision that honours the past while embracing the future, building a foundation for continuous growth and advancement.

Problem statement. The modern English as a Foreign Language (EFL) classroom is undergoing a profound and necessary transformation, shifting its focus from rigid, content-heavy instruction to dynamic, human-centred pedagogies prioritising interpersonal collaboration, emotional intelligence, and holistic development. This evolution is not merely a trend but a reflection of the broader, aspirational vision of Education 5.0. Unlike its predecessors, Education 5.0 extends far beyond technological fluency, aiming to cultivate deeply human competencies such as empathy, compassion, creativity, adaptability, and robust digital literacy. In this context, the role of the teacher shifts dramatically – from a mere conveyor of linguistic knowledge to a multifaceted mentor, emotional regulator, co-learner, and facilitator who actively fosters authentic, meaningful, and profoundly resonant learning experiences. Responding to these evolving needs and the increasing complexity of global challenges, Rachel Paling's NeuroHeart methodology emerges as a pioneering and highly relevant framework. This innovative approach unites cutting-edge insights from neuroscience, established emotional intelligence theory, and principles of educational psychology to guide teaching practices. The NeuroHeart teaching and coaching profoundly underscores the essential role of synchronising the brain, heart, and body for optimal learning outcomes. It positions educators as emotionally intelligent facilitators adept at nurturing trust, building resilience, and fostering a lifelong passion for learning within their students.

Analysis of recent research and publications. Education 5.0 emphasises informed, responsible decision-making regarding technological integration, particularly concerning privacy, ethics, safety, and mindfulness. It necessitates a comprehensive and inclusive approach to educational reform involving governments, educational institutions, industries, community stakeholders, and learners [1, 2, 3]. Central to this educational renaissance is the thoughtful integration of five key pedagogical approaches that serve as foundational pillars for 21st-century language instruction. The constructiv-

ist approach encourages students to actively build knowledge through engagement and critical reflection, recognising that learning is an active process of meaning-making. The collaborative approach fosters rich peer interaction and shared meaning-making, cultivating community and mutual support. Inquiry-based instruction stimulates critical thinking and problem-solving by centering learning on essential questions and real-world challenges. Integrative pedagogy connects multiple disciplines, promoting holistic comprehension and demonstrating the interconnectedness of knowledge. Finally, reflective practice involves ongoing self-evaluation, feedback, and adaptation for teachers and learners, fostering continuous growth and metacognitive awareness. These approaches collectively cultivate classrooms where relational dynamics and emotional attunement are not secondary but fundamental, serving as powerful catalysts for deeper, more sustainable, and personally relevant learning [4, pp. 675–677]. Notably, educational neuroscience and emotional intelligence theory converge with pedagogical practice; scholars and practitioners seek frameworks that foster coherence between cognition and emotion in the classroom. As stated by educational neuroscientists, neuropedagogies are intended not only to improve learning and teaching, but also for UNESCO to support humanistic purposes and the OECD to cultivate the skilled learning brains that may enhance cognitive performance and produce economically measurable value in an emerging brain economy. It is suggested that educational neurotechnologies can monitor active learning, cognitive engagement, and students' mental and emotional states in addition to detecting and measuring 'attention' and 'engagement'. "In education, hyperscanning research has examined 'brain-to-brain coupling' among teachers and students during lectures or interactive learning, focusing on the neural processes involved in the transfer of information across brains or the neural correlates of different instructional approaches" [5, pp. 5; 11]. Emotionally intelligent classrooms are also grounded in the belief that schools should be places where students feel safe, seen, and motivated to learn. A growing body of research suggests that when students experience a positive school climate – characterised by trust, emotional support, and autonomy – they are more likely to engage deeply with their studies, perform better academically, and exhibit resilience in the face of challenges [6]. This is especially relevant in language classrooms, where affective factors such as anxiety [7], motivation, and identity significantly influence learning outcomes.

In contemporary applied linguistics, increasing attention has been paid to the affective and cognitive dimensions of language learning, with scholars recognizing the role of learner emotion, motivation, and identity in the acquisition process. Neuroheart Education, developed by Rachel Paling (2017), emerges from this paradigm shift, offering a pedagogical framework that integrates neuroscience, coaching principles, and emotional intelligence into language education. It promotes a learner-centered, emotionally attuned, and brain-friendly environment that prioritizes not only what learners know, but how they feel while learning.

Of particular interest for our research was the “Brain-Friendly Grammar Boost” webinar by Rachel Paling, which presents a neuroscience-informed, emotionally intelligent approach to grammar instruction in EFL. Grounded in metacognition, coaching psychology, and learner autonomy, the method helps students understand their brain’s learning processes, reduce anxiety, and build grammar knowledge through emotional safety and gamification. Teachers foster efficient, joyful learning using chunking, scaffolding, and cognitive-emotional alignment techniques. Neurobiological and psychological studies show that anxiety, such as Foreign Language Anxiety (FLA), can impair memory and attention by activating pain-related brain areas [7, p. 797]. Paling’s PACT PQC model structures the grammar learning session as: **P** – Placement; **A** – Assessment; **C** – Conversation; **T** – Teaching; **PQ** – Powerful Questions; **C** – Clarification. The approach is non-directive and co-creative, with learners setting goals and reflecting, which builds engagement and autonomy. Cross-linguistic scaffolding is encouraged to optimise brain connections [8]. Furthermore, coaching built on Positive Emotional Attractors (PEA) fosters vision, motivation, and trust, aligning fully with the humanistic values of Education 5.0 and NeuroHeart education. Grammar becomes a co-explored, emotionally resonant experience – more coaching than teaching [9]. Educators should prioritise relational pedagogy to cultivate such environments – fostering empathy, encouraging student voice, and building authentic connections. Providing students with meaningful choices, acknowledging their achievements, and encouraging co-constructed learning experiences are central to this process. These practices align with the principles of both CLIL and the NeuroHeart approach, which advocate for emotionally responsive and socially contextualised instruction.

This article explores the theoretical foundations, practical pedagogical implications, and transformative potential of integrating the NeuroHeart method

into EFL teaching contexts. It argues compellingly for adopting an emotionally intelligent pedagogy uniquely equipped to meet the multifaceted demands of the 21st-century learner in the dynamic age of Education 5.0. Furthermore, it will highlight this approach’s particular relevance and impact in challenging and trauma-sensitive settings, such as classrooms affected by ongoing war, exemplified by the experiences in Ukrainian educational environments.

Presentation of the main material. This conceptual article synthesises interdisciplinary theoretical insights and contemporary pedagogical practices to articulate the NeuroHeart methodology as a framework for 21st-century EFL education. Drawing from neuroscience, emotional intelligence research, educational psychology, and holistic pedagogies, the Neuroheart Education, developed by Rachel Paling [8–11], integrates neuroscience, coaching psychology, and language education findings. Its core principle is that emotionally safe, learner-empowered environments facilitate brain-friendly learning. It emphasises coaching-style facilitation, where educators act as guides rather than transmitters of knowledge, promoting learner autonomy, empathy, and intrinsic motivation. In language and translation education, peer teaching – a structured form of collaborative learning where students teach and learn from one another – emerges as a powerful pedagogical strategy for equipping learners with the competencies needed for real-world communication. By fostering active engagement and reciprocal knowledge exchange, peer teaching enhances metalinguistic awareness, critical thinking, and communicative competence [12]. When integrated into task-based or project-based translation pedagogy, it transforms the classroom into a dynamic space where translation is approached not as a static product but as an evolving process. Through such experiential learning, students are encouraged to reflect professionally, develop autonomy, and engage deeply with the emotional and cognitive dimensions of language use. This aligns with contemporary demands that require linguistic precision and emotional and cultural intelligence. Despite their origins in different pedagogical traditions, peer teaching and Neuroheart Education share several core principles: learner autonomy, mutual respect, emotional safety, and reflective engagement. Implementing peer teaching within a Neuroheart framework enables learners to develop linguistic and interpersonal competencies – essential for translators and interpreters operating in multilingual and multicultural contexts. Yet, empirical studies exploring this intersection remain scarce, especially in non-Western academic environments. This study

addresses that gap by examining how a peer-led translation workshop within a Neuroheart-informed curriculum contributed to students' development as linguistically skilled and emotionally aware translation practitioners.

Practical Experience: Peer Teaching in Action within a Neuroheart Framework. The two-part “*Life-Hacks for Tricky Translation*” session offered a concrete application of peer teaching within a Neuroheart-informed pedagogical setting. Conducted across two dates – April 23 and 30, 2025 – the sessions brought together Translation Studies and International Studies students in a cognitively engaging, emotionally safe, and collaborative environment. The workshops were led by two 4-year students majoring in International Relations and Translation Studies, *Sofia Bogdanova* and *Viktoriia Matushak*, who assumed the role of peer educators. As advanced learners and facilitators, their dual function embodied Neuroheart's coaching philosophy, where the teacher-student dynamic becomes horizontal rather than hierarchical. Sofia's “*Lost in Translation and Found Again*” session focused on diplomatic and institutional translation challenges in her work with the Ukrainian Delegation to the Council of Europe. Drawing on emotionally charged, high-stakes translation scenarios, she prompted participants to reflect on the emotional weight of lexical choices and the cultural resonance of register and tone. Viktoriia delivered an “*Interactive Workshop on Honing Translation Skills*,” which used real-world texts and live group translation to promote metalinguistic awareness and negotiation. Her facilitation style, based on cooperative scaffolding, encouraged students to ask “why” as often as “how,” fostering reflection on form and meaning. The sessions featured two key experiential activities that promote empathy, emotional engagement, and co-regulated learning: “*Broken Interpreter*” Role Play. Students took turns interpreting a dialogue between speakers from conflicting cultural backgrounds, deliberately complicated by vague references and culturally loaded idioms. The exercise challenged students to: recognise emotional cues in language; navigate linguistic gaps with composure and creativity; collaborate under pressure, mimicking real-life interpreting environments. Reflective feedback indicated that this task improved interpretive agility and cultivated empathy for both the speaker and the interpreter, a vital component of emotionally intelligent communication.

Team-Based Comparative Translation Task. Groups were assigned different translations of a short, culturally rich passage. Their task was to compare the translation strategies used, evaluate which version most effectively preserved meaning, tone, and

cultural nuance, and justify their choices regarding linguistic accuracy and emotional impact. Students noted that the task deepened their understanding of translation as a subjective, ethical, and interpersonal act, rather than a purely technical process. Students enthusiastically engaged in a role-playing simulation, “*Broken Interpreter*”, which sharpened their interpreting reflexes under pressure; a team-based comparative translation task, promoting collaboration, discussion, and deeper understanding of translation choices across languages and contexts. In line with Neuroheart principles, the sessions concluded with guided reflection circles. Students were invited to: articulate their emotional responses to the tasks, share moments of uncertainty or insight, and express how collaboration influenced their translation thinking. Common themes included: increased confidence through peer validation, a new appreciation for the emotional dimensions of linguistic choices, and recognition of the value of being both a listener and a speaker in the learning process. One participant wrote, “When Sofia explained how a wrong word in a diplomatic context could shift the entire tone of a document, I felt the real-world pressure of translation in a new way – it's not just words, it is responsibility” [13].

Classroom-Based Application of Peer Teaching in Neuroheart Education. In a recent implementation of peer teaching within my classroom, students majoring in International Relations and Public Communications, EFL and Translation Studies were invited to design and deliver lessons for their peers on topics related to Education and Learning. This approach supported content mastery and embodied key Neuroheart Education principles such as emotional connection, learner autonomy, and cognitive-affective integration. *Peer-Delivered EFL Grammar Lessons.* 2-year students were suggested peer-teaching and assigned to research, design, and teach complex grammar topics – such as conditionals, modal verbs, or passive voice integrated in newly learned vocabulary. Each peer-volunteer created interactive mini-lessons incorporating real-life scenarios, games, and collaborative exercises. Respectively, we could observe: *Emotional Connection:* Because the lessons were crafted with peers in mind, activities were tailored to their interests and language challenges: humour, storytelling, and personal examples deepened emotional engagement. *Cognitive Benefits:* Teaching grammar required students to break down abstract rules, anticipate misconceptions, and explain nuances clearly, reinforcing their metalinguistic awareness. *Heart-Brain Coherence:* The collaborative process fostered psychological safety, reduced

language anxiety, and promoted group cohesion, which aligned with the neuro-affective goals of the Neuroheart model. *Ownership and Autonomy*: The students aired their profound knowledge of the pertinent material and applied their thoughtful and innovative teaching approaches. In particular, a brilliant idea was generated to begin with a pop quiz and a diagnostic assessment of their peers' knowledge, and it was both engaging and effective in setting the tone for deeper learning. The discussion on the HyFlex education system was thought-provoking, encouraging students to explore how different learning formats can foster creativity and on-the-spot speaking skills. I also valued the variety of educational methods and activities they incorporated, which made the class vibrant, inclusive, and stimulating. The classes were dynamic, multicultural, multidisciplinary, bilingual, well-managed and powerfully guided. Students curated their content and chose delivery styles, from creative storytelling to role-play simulations. This agency fuelled deeper motivation and engagement. *Empathy and Perspective-Taking*: In preparing to teach others, students anticipated peers' learning needs and adapted their presentations accordingly – an exercise in empathic communication central to Neuroheart Education. *Reflective Growth*: After each session, students led a reflective discussion and received peer feedback, promoting metacognition and emotional literacy. These classroom-based peer teaching sessions were thought-provoking, real-world relevant, and profoundly empowering, transforming theory into practice while fostering emotional intelligence, critical thinking, and communication – precisely the learning Neuroheart Education strives to cultivate. *Observed Outcomes*: increased student confidence, especially among typically reserved learners; stronger peer relationships and a more collaborative classroom culture; improved academic performance and retention on peer-taught topics; emotional expressions of pride, excitement, and gratitude – clear indicators of heart-brain alignment in action. These peer-teaching sessions demonstrate that when students step into the educator role, they do more than transmit knowledge – they embody Neuroheart values: emotional awareness, relational learning, self-efficacy, and cognitive depth. As such, peer teaching becomes not merely a method, but a transformative experience that aligns education with the full spectrum of human neuro-affective potential. *Student Reflections: The Emotional and Cognitive Impact of Peer Teaching*. Integrating peer teaching in Education and EFL classes offered students a platform to consolidate their knowledge and a deeply personal and trans-

formative experience. These reflections reveal how teaching others fostered emotional engagement, confidence-building, and a deeper connection to the learning process – key components of Neuroheart Education.

“I conducted an English lesson, and overall, I am quite satisfied with how it went. The students were active and showed a good level of interest... I was pleased that all students participated and weren't afraid to share their opinions.”– *Sasha Bozhuk*. Sasha's reflection emphasises the importance of creating a safe emotional climate – a fundamental tenet of Neuroheart Education. When peer educators foster inclusive and low-stress environments, learners are more willing to take risks and share authentically.

“At first, I was super excited. It took me around three hours to get everything ready for the lesson. I felt pretty confident, but I was still a bit nervous. I've dreamed of being an English teacher since I was a kid, so in a way, I feel like that dream came true... After the lesson, I felt this mix of calm and joy. Honestly, it was such an unforgettable experience that I couldn't stop talking about it to my whole family.”– *Violetta Surovtseva*. This heartfelt response illustrates the emotional salience of peer teaching – an experience that triggers dopamine and oxytocin release, supporting motivation and relational memory consolidation. For Violetta, teaching bridged personal identity, aspiration, and social connection – hallmarks of the Neuroheart model.

“Actually, I used to think that teaching is not my cup of tea... but the experience of having an English class changed my mind. I fully enjoyed the preparation, inventing the tasks, and structuring the lesson... I was pleased when my peers zealously did the tasks. It was hard to keep everyone focused, but I'd like to try myself as an English tutor one day.”– *Hanna Shevchuk*. Hanna's shift from reluctance to aspiration highlights growth in self-concept and responsibility, which is closely tied to prefrontal cortex activation during reflective, emotionally engaged learning. The challenge of classroom management became a learning opportunity, rather than a deterrent – demonstrating the development of resilience and teacher empathy.

“This experience provided a unique opportunity for me to embrace a distinctive role, which proved insightful and advantageous – not just for my personal development, but for the entire group involved. It was gratifying to facilitate an environment where students could enjoy themselves while absorbing new concepts. Incorporating an English song into the session introduced a valuable dynamic that enhanced engagement among participants, simultaneously

refining their listening and comprehension skills.” – *Stas Gubko*.

This peer-to-peer feedback reveals the mutual respect and emotional resonance that peer teaching can foster. It also reflects the NeuroHeart emphasis on student leadership, intellectual curiosity, and inclusive dialogue. These testimonials prove that peer teaching activates cognitive and affective networks in the brain, increasing learner agency and self-efficacy; stronger relational bonds and classroom cohesion; improved critical thinking and reflective capacities; and a sense of purpose and fulfilment. By placing students in the role of the teacher, we invite them to synchronise heart and brain, theory and practice, self and other. In this way, peer teaching becomes not just a method – but a NeuroHeart-aligned transformation.

Conclusions. This article underscores the importance of a pedagogical model that transcends mere technological adoption by integrating educational technologies with insights from neuroscience. Such an approach enriches the learning experience, fosters student autonomy, and addresses individual learner needs, equipping students to navigate the complexities of the modern world. As we journey deeper into the era of Education 5.0, the imperative to humanise and harmonise learning has never been more urgent. The NeuroHeart methodology stands at the forefront of this transformation, offering an innovative and

research-informed pathway to reimagine English as a Foreign Language education through the intertwined lenses of neuroscience, emotional intelligence, and holistic pedagogy. By placing heart-brain coherence and authentic human connection at the core of teaching, NeuroHeart transcends traditional instructional boundaries, transforming classrooms into sanctuaries of psychological safety, resilience, and profound engagement. This model nurtures linguistic proficiency and cultivates empathy, creativity, and global citizenship – qualities essential for learners facing the complexities of an interconnected, often turbulent world. Looking ahead, the promise of NeuroHeart Education is immense. It invites educators, researchers, and policymakers to forge educational ecosystems where technology and humanity coalesce collaboratively, not compete. As artificial intelligence advances, teachers’ emotional intelligence and relational wisdom will sustain the soul of education. In embracing this vision, we reclaim the classroom as a vital space for awakening minds, inspiring hearts, and empowering spirits. The future of EFL – and education at large – depends on our commitment to teaching with both science and soul. Through NeuroHeart, we glimpse an educational horizon rich with possibility. Where learners flourish as whole beings, and teachers embody the timeless role of guides in the lifelong journey of human growth.

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