

BRAIN-FRIENDLY APPROACH TO TEACHING ENGLISH FOR SPECIFIC PURPOSES

ДРУЖНІЙ ДО МОЗКУ ПІДХІД ДО ВИКЛАДАННЯ АНГЛІЙСЬКОЇ МОВИ ДЛЯ ПРОФЕСІЙНОГО СПРЯМУВАННЯ

This paper explores the application of a brain-friendly approach to teaching English for Specific Purposes, integrating game-based learning (GBL) and linguistic coaching elements, by the example of teaching English to marine engineers. Traditional grammar-translation approach fails to meet current needs of seafarers who work in international environment and stressful conditions, causing anxiety-related communication breakdowns and emotional blocks. This article is based on researches in psycholinguistics claiming the importance of reducing stress in learning process. To ensure effective learning and promote long-term retention, the emphasis should be placed on creating an emotionally safe, engaging, and contextually meaningful learning environment.

Particular attention is paid to role-playing games simulating real-like professional situations for ship engineers, as well as to coaching strategies minimizing cognitive and emotional overload during learning. Game-based learning approach immerses students in realistic maritime scenarios, stimulating interest and engagement, and boosting students' communication and interaction skills in professional contexts. The article touches on coaching techniques allowing to reduce anxiety and remove language barriers in maritime settings.

The introduction of neurolinguistics coaching principles to teaching English gives students the sense of control over the learning process, fostering their intrinsic motivation. The author provides role-play scenarios tailored for marine engineers, involving brain-friendly elements to make the activities more emotionally supportive and enjoyable to improve students' English proficiency and communication readiness at sea. The interference of these methods can create a safe and effective learning environment helping maritime professionals be successful in their job-specific communication.

Key words: brain-friendly learning, educational games, neurolinguistic coaching strategies, memory retention, emotional engagement, Maritime English.

У статті розглянуто застосування дружнього до мозку підходу до викладання англійської мови професійного спрямування із

використанням ігрових методів навчання та елементів лінгвістичного коучингу на прикладі викладання англійської мови для суднових інженерів. Традиційний граматико-перекладний підхід не відповідає сучасним потребам моряків, які працюють у міжнародному середовищі та в умовах стресу, який призводить до комунікативних проблем та виникненню емоційних блоків. Стаття ґрунтується на дослідженнях у галузі психолінгвістики, яка підкреслює важливість зниження стресу в навчальному процесі. Для забезпечення ефективного навчання та довготривалого запам'ятовування необхідно створювати емоційно безпечне, захопливе та контекстуально змістовне освітнє середовище.

Особлива увага приділяється рольовим іграм, що імітують реальні професійні ситуації для суднових інженерів, а також коучинговим стратегіям, які мінімізують когнітивне та емоційне навантаження під час навчання. Ігровий підхід занурює студентів у реалістичні морські сценарії, стимулює їх інтерес та залученість, а також сприяє розвитку комунікативних та інтерактивних навичок у професійному контексті. У статті також розглядаються коучингові техніки, які допомагають знизити тривожність і подолати мовні бар'єри в морському середовищі.

Запровадження принципів нейролінгвістичного коучингу у викладання англійської мови дає студентам відчуття контролю над процесом навчання та сприяє розвитку внутрішньої мотивації. Автор надає приклади рольових сценаріїв, адаптованих для суднових інженерів, із використанням елементів, дружніх до мозку, щоб зробити навчання емоційно підтримуючим, приємним, сприяючи підвищенню рівня володіння англійською мовою та комунікативної готовності до роботи на морі. Поєднання цих методів дозволяє створити безпечне й ефективне навчальне середовище, яке допоможе морським фахівцям успішно вести професійну комунікацію.

Ключові слова: навчання, дружнє до мозку, освітні ігри, стратегії нейролінгвістичного коучингу, збереження в пам'яті, емоційна залученість, морська англійська.

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Introduction. The implementation of neuroscience researches findings into teaching and learning strategies, particularly in English language teaching, is drawing steadily growing interest. Educators are beginning to understand the importance of how brain naturally processes, stores, and retrieves information for effective learning process, and giving due consideration to incorporating these principles into the methodology of English instruction. However, it's still not sufficiently clear how these strategies impact learning outcomes. While the theoretical basis of brain-based learning is well-established, its practical

applications that can provide measurable effect in language acquisition, namely in ESP, are still being explored and require more empirical evidence.

This research studies how coaching methodologies, based on brain-friendly principles, can be effectively integrated into teaching real-life English. The focus is on Maritime English as a practical example. The concept of linguistic coaching focuses the activation of learner autonomy, self-reflection, and intrinsic motivation.

By integrating brain-based pedagogy we give rise to deeper cognitive engagement and personalized

goal-setting which makes it particularly useful for professionals who work in high-stakes environments. Such specialists particularly require targeted, stress-reducing approaches that improve their communicative confidence and competence.

Theoretical analysis of recent researches.

Negative learning experiences can cause communication breakdowns

English language proficiency is fundamental for marine engineers in the global maritime industry. However, grammar-heavy methods of language acquisition that offer limited practical application do not meet high demands placed on marine engineers by modern employment market. Past negative learning experiences and high-pressure working conditions requiring rapid decision-making and precision often lead to low self-esteem and communication problems.

The integration of game-based learning approach through the prism of linguistic coaching principles, can considerably level up the effectiveness of English learning by this target group. This approach encourages a positive learning mindset, engaging marine engineers into fun and interactive real-like professional contexts and making a language journey a more enjoyable and less stressful experience.

Identification of previously unresolved aspects of the general problem. Role-playing is a valuable method in teaching English to seafarers, which is well-regarded among educators. Through replicating challenging communicative situations that maritime engineers can face in their work, it creates an engaging learning environment that fosters students' confidence in using English in professional settings. But the problem of anxiety originating from negative learning experiences remains an open issue and calls for in-depth consideration and an effective solution.

Traditional teaching methods do not fully consider how the brain processes information. Recent studies have shown that the role of such factors as attention and emotional states in learning cannot be underestimated. Stress activates the limbic system (particularly the amygdala) which is responsible for the "fight or flight" response. This process partially shuts down the prefrontal cortex, the area responsible for logic, analysis, and speech. This means that a learner might "know" the answer but cannot recall it because the brain is in a survival mode.

The situations that add up to poor English-related communicative difficulties, involve learning under pressure which doesn't give rise to intrinsic motivation but leads to anxiety, shame and avoidance of speaking.

So, it's ultimately necessary to create safe brain-friendly learning environment that ensures high degree of students' engagement and sustainable intrinsic motivation. Brain-friendly learning aligns with

the natural functioning of the human brain. It's proven by numerous researches in cognitive psychology and neuroscience [1], that emotionally safe and meaningful experiences support neuroplasticity, emotional regulation, and better retention of information.

The purpose of the research is to explore neuroscientific background of English acquisition, along with the development of practical solutions on the application of these principles in the language classroom. These strategies involve specific holistic techniques, such as emotional scaffolding, contextual learning, and immediate feedback, thus creating more engaging and neurologically supportive learning experience. Keeping in mind the pragmatic aspect, and the need to meet learners' specific linguistic and professional needs, this research looks into practical strategies aimed at achieving optimal learning outcomes, navigating between brain-conscious, holistic approach to teaching and pragmatic, highly efficient strategies.

Finally, by exploring the intersection of neuroscience, coaching, and modern methodology, this research suggests an alternative to traditional teaching, adopting innovative, yet natural strategies that ensure more effective stress-free learning environments and lead to truly optimal learning outcomes.

Presentation of the main material. Main elements of a brain-friendly approach are as follows: reducing stress and enhancing psychological safety; engaging learners through novelty and relevance; repetition and structured practice; activating positive emotions (e.g., curiosity, humor, achievement).

Jensen argues that "when students are promoted with a learning environment that is optimal for learning, graduation rates increase, learning difficulties and discipline problems decrease, a love of learning flourishes..." [2, p. 211].

Game-based learning (GBL) is an educational approach where content is delivered through a game, or a role-play, with the use of game mechanics and narratives to achieve educational objectives. The idea is to engage students in active participation to better master the language and professional knowledge, practice skills, and retain what they've learned. In teaching professional English to marine engineers, games can simulate real-life tasks (communication between crew members, emergency situations, docking procedures) and encourage participation, thus enhancing interaction skills and reducing stress in real professional communicative situations [3, p. 20].

Games create a comfortable and engaging learning environment which in its turn provides favorable conditions for brain activity. Gameplay activates various areas of the brain responsible for maintaining attention, motivation, and memory retention, specifically dopamine system, stress

reduction; active thinking and engagement, and multisensory perception.

Both gamification and games-based learning incorporate game elements. However, GBL suggests full immersion in a game with educational content, while gamification makes use of separate game elements (points, rankings, etc.). Being used in combination, these two methods demonstrate higher effectiveness.

There is a variety of activities in the frame of GBL we could use at Maritime English lessons: from roleplays to mobile applications. Role-playing games can simulate negotiations between the Chief Engineer and the Agent or discussions with a Superintendent or shore authorities. Another tool is a Board and Card Games. These are really effective in learning maritime terminology. Computer Simulations can perfectly submerge the students into real-like and interactive context to practice professional, communicative and decision-making skills. Mobile Apps can drill grammar and professional vocabulary through missions or tasks (for example, Quizlet, Anki, Memrise).

Linguistic coaching applies coaching methods to language teaching. It focuses on autonomy, metacognitive awareness, goal orientation, and reducing emotional blocks. Through the integration of both brain-friendly and game-based learning, neurolinguistic coaching approach creates a low-anxiety atmosphere and helps learners keep their motivation for learning high and sustainable [4, pp. 94-95].

It's been mentioned that stress can become a significant barrier for adults learning a language, triggering the "fight or flight" response [5, pp. 54-55]. Marine engineers may develop a particularly intense reaction for they often associate English with exams or professional stress. On the other hand, a psychologically safe learning environment can help activate neural pathways related to long-term memory, cognitive flexibility, and verbal fluency.

Strategies for calming the stress in game-based learning may include:

- Focusing on psychological safety and positive reinforcement: emphasizing that mistakes are normal and necessary, being a part of a learning journey;
- Ensuring the sense of having the control over the situation on the part of students: signposting, providing phrase starters, visual aids, and glossaries; chunking down tasks into smaller, achievable steps;
- Using humor, storytelling, and peer support: introducing humorous or unexpected twists in role-play scenarios (e.g., a hilarious reason for a failure caused by a crewmember, or a funny personage struggling with English as a foreign language, etc.);
- Allowing time for preparation and rehearsal: students have time for preparation and rehearsal before performing; encouraging multiple attempts at the same scenario;

- Asking coaching questions like "What would you improve next time?" instead of "What went wrong?"

Research and outcomes

Role-Playing Games for Marine Engineers

We trialed a set of roleplays tailored specifically for marine engineers in the classroom at National University "Odesa Maritime Academy" to explore how professional content can be delivered in the frame of GBL approach integrated with coaching elements. Here are some of the scenarios role-played during the experiment.

Role-play 1. Emergency Situation in the Engine Room

Synopsis: A sudden drop in oil pressure is detected, and quick action is required. One student will take the role of the 2nd engineer, and another will be the chief engineer. They must communicate effectively over the intercom, using accurate maritime terminology to manage the situation, namely: to detect the problem, diagnose the cause, and coordinate the response.

Tasks: 2nd engineer reports the drop in pressure. Chief engineer asks clarifying questions and confirms actions. Both engineers discuss possible solutions and agree on immediate steps to take.

Vocabulary: Oil pressure, intercom, malfunction, valve, pump, diagnostics, shutdown, emergency protocol.

Brain-Friendly Elements: predictable phrases to use; functional language bank: listing; asking for clarification; inquiring; suggesting; humor (including an unexpected "miscommunication" into scenario).

Role-play 2. Pre-Maintenance Meeting

Synopsis: Before any technical maintenance, engineers hold a pre-maintenance meeting to discuss necessary safety procedures and ensure everything is in order. A small group of engineers are preparing for a maintenance task on the engine, and they must discuss the required safety steps, tools, and precautions.

Tasks: identify safety steps that must be followed. First, the meeting agenda is introduced; agree or disagree on the necessity of specific safety precautions, e.g., "You must wear protective gear"; discuss any safety incidents and solutions.

Vocabulary: modal verbs practicing (giving instruction, recommendations); safety gear, maintenance checklist, hazard, inspection, protocol; functional language: asking for clarification, inquiring, giving instruction, agreeing, disagreeing.

Brain-friendly elements: cards with random "safety incidents" to be discussed (e.g., "What do you do if a tool breaks mid-repair?"); humorous situations or personages to comment on/find the solution.

Role-play 3. Inspection Report Simulation

Synopsis: A port control officer carries out an inspection. One student takes the role of the officer, the other is an engineer. The engineer must answer questions regarding the maintenance, procedures,

and safety of the vessel. This role play focuses on explaining technical procedures in clear, professional English, using the passive voice where necessary.

Tasks: the port control officer begins by asking questions about the vessel's condition; the engineer responds, describes actions taken and procedures followed, often using passive voice (e.g., "The maintenance has been completed" or "The inspection report was filed").

Vocabulary: inspection, procedure, maintenance, testing, report, compliance, standard operating procedure (SOP), safety protocol; functional language: inquiring, reporting, clarifying, listing, describing.

Brain-friendly elements: Students can be provided with a list of ready-made phrases and sentence starters to reduce cognitive load (e.g., "The maintenance was carried out according to...").

The outcomes of the research. The effectiveness of the Game-Based Learning (GBL) in teaching Maritime English is well researched [5, p. 26]. However, it has certain limitations in learners' confidence and real-world language application.

The current research offers the integration of coaching strategies into game-based approach to teaching ESP. The GBL-with-coaching group noted greater comfort and self-assurance in using English in professional settings.

The results of the experiment were measured using a combination of qualitative and quantitative tools aimed to assess various aspects of language learning, including engagement, confidence, communication skills, retention, and emotional well-being.

At the end of "a coaching-integrated roleplay" the learners completed a self-report scale at the start and end of the roleplay, which asked them to rate their anxiety levels on tasks such as speaking English in front of others, making mistakes, and using English at work. The after-game version also addressed the following questions:

- Motivation levels (e.g., "How motivated did you feel before the roleplay?")
- Engagement (e.g., "How engaging did you find the learning activities?")
- Confidence in using English (e.g., "How confident do you feel communicating in English at work?")
- Perceived enjoyment of the learning experience.

The analyses of the learners' feedback demonstrated high levels of motivation and confidence along with a reduction in anxiety levels due to coaching strategies which helped to manage stress through reflection, encouragement, and emotional support.

A delayed retention test was conducted 1 month after the roleplay, measuring the vocabulary and grammar retention over time, demonstrated above-average level.

Conclusion. The brain-friendly approach to teaching maritime English with the integration of game-based learning methods and elements of linguistic coaching presents a strong alternative to traditional English language teaching for marine engineers, since it aligns with the natural mechanisms of language acquisition, particularly in how memory, attention and motivation affect learning. Linguistic coaching improves self-awareness and intrinsic motivation, which are key elements for sustainable success in learning. Incorporating brain-friendly strategies in combination with game-based approach into maritime English teaching enhances communication and interaction skills – competencies that are crucial at sea.

Furthermore, game-based elements such as simulations, role-plays, and interactive problem-solving scenarios help foster learners' emotional involvement which serves better long-term memory formation, as the brain tends to retain information associated with positive experiences.

While initial findings are promising, it's essential, however, to align these strategies with further empirical research to validate the long-term effects and practical application of these approaches in facilitating marine professionals to retain and apply English in their daily work environments. In addition, future research can focus on developing specific technological solutions, like digital learning platforms, mobile apps, or virtual simulations creating augmented reality (AR) and introducing the features of gamification.

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