



Integrating Graphic Organizers and Cooperative Learning in EFL Reading: A Synergistic Framework for SLA, CLIL, and Social-Emotional Learning

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Abstract: Traditional English as a Foreign Language (EFL) reading instruction often overemphasizes bottom-up grammatical and lexical decoding, leading to passive comprehension, heightened language anxiety, and limited communicative output—ultimately failing to meet the communicative and holistic demands of contemporary English education. To overcome these pedagogical limitations, this position paper proposes a synergistic framework that systematically integrates graphic organizers (cognitive scaffolding) with cooperative learning structures (social scaffolding). Drawing upon the core tenets of Second Language Acquisition (SLA), the 4Cs framework of Content and Language Integrated Learning (CLIL), and Collaborative for Academic, Social, and Emotional Learning (CASEL) competencies, this paper demonstrates how visual tools and structured peer interactions mutually reinforce deep text processing and holistic learner development. Furthermore, this framework is operationalized through a concrete, three-stage instructional procedure (pre-, while-, and post-reading) utilizing various graphic organizers and culminating in an innovative, author-proposed K-W-L-F-T chart (Know, Want to know, Learned, Felt, Thought). By deliberately distinguishing factual understanding from affective responses and critical reasoning, the proposed model lowers the affective filter, fosters psychological safety, and transforms EFL reading into an active, meaning-focused, and socially supportive endeavor.

1. INTRODUCTION

In English as a Foreign Language (EFL) contexts where learners often have limited opportunities for natural spoken interaction, reading serves as the primary source of rich linguistic input (Grabe &

Stoller, 2019). Through extensive and regular exposure to written texts, learners can acquire new vocabulary incidentally (Nation, 2013) and develop overall communicative proficiency (Krashen, 2004). Furthermore, written texts provide learners with the autonomy to process

information at their own pace and revisit challenging sections. While reading was traditionally perceived as a passive decoding activity, contemporary applied linguistics views second language (L2) reading as an active, constructive process in which readers dynamically build meaning by integrating linguistic knowledge, background knowledge, and cognitive strategies (Grabe, 2009; Koda, 2005).

Nevertheless, many EFL learners encounter substantial difficulties in reading comprehension. In particular, they often struggle to identify main ideas, trace macro-level text structures, and synthesize information into a coherent mental representation. Graphic organizers serve as powerful cognitive scaffolding to alleviate these challenges by visually mapping text structures and externalizing logical relationships. Furthermore, when graphic organizers are implemented collaboratively within cooperative learning structures, they provide crucial social scaffolding, enabling students to co-construct deeper understanding through meaningful interaction and shared cognition.

Although previous studies have investigated graphic organizers and cooperative learning independently, few have explored how to systematically combine them in EFL reading classrooms. To address this pedagogical gap, this position paper proposes a synergistic framework that integrates graphic organizers with cooperative learning structures. The paper begins by reviewing the theoretical foundations of L2 reading comprehension. It then examines graphic organizers as visual cognitive tools and outlines the core principles of cooperative learning. Synthesizing these dimensions, the paper illustrates the synergistic benefits of this approach for Second Language Acquisition (SLA), Content and Language Integrated Learning (CLIL), and Social-Emotional Learning (SEL). Subsequently, it provides a concrete three-stage instructional procedure (pre-, while-, and post-reading) featuring an innovative, author-proposed K-W-L-F-T chart alongside other visual organizers. Finally, it outlines directions for future empirical research to rigorously validate this synergistic model.

2. READING: COGNITIVE PROCESSES AND SOCIAL FACTORS

Before discussing the integration of graphic organizers and cooperative learning, it is necessary to examine the multifaceted nature of reading and the cognitive mechanisms involved in text comprehension. The theoretical framing in this section is primarily grounded in the comprehensive work of Grabe and Stoller (2019) and Grabe and Yamashita (2022).

2.1. Cognitive Complexity and Interactive Processes in Fluent Reading

Grabe and Stoller (2019) identify seven distinct purposes of reading, ranging from searching for specific information to critiquing printed material; however, the primary goal in academic contexts is reading for general comprehension. Although fluent readers often perform this process effortlessly and automatically, reading for general comprehension involves intricate cognitive operations. A fundamental distinction is made between *skills* and *strategies*: skills refer to linguistic processing abilities that operate relatively automatically, whereas strategies denote conscious, deliberate actions employed by readers to monitor and enhance comprehension. While differentiating them based on conscious control is standard pedagogical practice, the dynamic nature of reading frequently creates an overlap between the two. Crucial reading strategies include previewing text structures, activating background knowledge, making inferences, and strategic rereading.

In addition, rapid and interactive processing constitutes an essential condition for fluent reading. Fluent readers decode text rapidly, allowing working memory to coordinate multiple cognitive operations simultaneously without overload. Reading is fundamentally interactive in two respects: first, bottom-up processing (word recognition, syntactic parsing) dynamically interacts with top-down processing (schemata, background knowledge stored in long-term memory); second, the reader actively negotiates meaning with the text.

2.2. Reducing Cognitive Load Through Graphic Scaffolding

Educators must recognize the extensive cognitive demands outlined above, which span reading purposes, fluent reading processes, component abilities, and diverse knowledge sources (Grabe & Stoller, 2019). The heavy cognitive load required to coordinate these parallel processes can be effectively mitigated through the strategic use of graphic organizers. By visually mapping discourse structures and hierarchical relationships, graphic organizers provide an external "big picture" of the text, facilitating the smooth interaction between bottom-up decoding and top-down conceptual synthesis (Jiang & Grabe, 2007).

2.3 Social and Contextual Dimensions of Reading

While cognitive mechanisms are central to reading, literacy development is equally embedded in social and cultural environments. Grabe and Yamashita (2022) emphasize that readers are shaped by broader socio-cultural contexts, identifying 12 distinct environmental and contextual factors. Among these, educational resources, institutional school climates, and peer interactions are directly relevant to cooperative learning. In particular, structured peer interaction provides critical social scaffolding that supports text interpretation, while sharing educational resources fosters collective efficacy. Moreover, cooperative reading instruction flourishes most effectively when the institutional climate prioritizes collaboration over individualistic competition.

In summary, while graphic organizers systematically alleviate cognitive demands, cooperative learning structures provide the social mediation necessary for collaborative meaning construction. Integrating these dual scaffoldings establishes an optimal pedagogical ecosystem for deep EFL reading comprehension.

3. GRAPHIC ORGANIZERS IN READING INSTRUCTION

3.1. Definitions, Types, Scaffolding Functions of Graphic Organizers

A graphic organizer (GO) is defined as a visual representation of knowledge that structures

information by arranging important aspects of a concept or topic into a coherent pattern using labels (Bromley et al., 1999, p. 6). Prominent types of graphic organizers include semantic maps, structured overviews, story webs, Venn diagrams, concept maps, vocabulary maps, and mind maps (Bromley et al., 1999; McKnight, 2010). These visual devices serve as cognitive scaffolds that guide EFL learners in identifying central themes and discerning rhetorical relationships that might otherwise remain implicit or cognitively overwhelming in dense L2 texts.

3.2. Theoretical Foundations of Graphic Organizers

The pedagogical efficacy of graphic organizers is grounded in cognitive schema theories. Grounded in Ausubel's (1968) Assimilation Theory and Novak and Gowin's (1984) concept mapping framework, GOs serve as visual anchors that explicitly link novel textual propositions to existing schemata. By helping learners externalize and hierarchically structure conceptual relationships, graphic organizers foster deep, meaningful comprehension rather than superficial rote memorization. Furthermore, Dual Coding Theory (Paivio, 1986; Sadoski & Paivio, 2001, 2004) provides robust cognitive support for the multimodal affordances of GOs. Dual Coding Theory posits that the human mind processes information through two separate yet interconnected channels: a nonverbal (visual/spatial) system and a verbal (linguistic) system. When EFL readers engage with texts multimodally—decoding textual propositions while mapping them visually onto a graphic organizer—additive, dual representations are constructed in memory. This synergistic dual processing reduces extraneous cognitive load in working memory and is expected to foster text comprehension and long-term retention.

3.3. Empirical Research: Graphic Organizers and Discourse Structure

Empirical investigations in L2 reading underscore the critical role of discourse structure awareness in text processing. Jiang and Grabe (2007) and Jiang (2012) demonstrate that graphic organizers that

explicitly reflect top-level discourse patterns (e.g., classification, cause-effect, problem-solution, comparison-contrast) significantly enhance L2 reading comprehension. When EFL readers are trained to recognize rhetorical organizations through visual representations, their ability to extract macro-level propositions, synthesize information, and produce coherent summaries improves markedly, effectively overcoming the word-by-word decoding bottleneck common among developing readers.

3.4. Pedagogical Challenges and the Need for Social Scaffolding

While graphic organizers offer undeniable cognitive benefits—namely, mitigating cognitive load, clarifying macro-structures, and promoting schema activation—their instructional implementation in EFL contexts presents notable challenges. When GOs are assigned merely as individual, teacher-directed seatwork, learners frequently resort to superficial, mechanical copying of isolated keywords from the text without genuinely synthesizing meaning. Moreover, overly complex organizers can inadvertently impose extraneous cognitive load on lower-proficiency readers in the absence of explicit strategic instruction.

To prevent graphic organizers from deteriorating into passive worksheets and to fully leverage their interactive potential, visual cognitive scaffolding must be coupled with social and communicative scaffolding. This imperative directly motivates the integration of graphic organizers within structured cooperative learning frameworks.

4. COOPERATIVE LEARNING

4.1. What is Cooperative Learning?

Cooperative learning can be understood through two influential perspectives: From the field of educational psychology, Johnson and Johnson (1993, p. 9) define cooperative learning as "the instructional use of small groups so that students work together to maximize their own and each other's learning." In second language acquisition (SLA), Jacobs, Power, and Loh (2002) define it as "principles and techniques for helping students

work together more effectively." While educators sometimes treat any pair or group work as cooperative learning, these definitions emphasize that structured cooperative learning requires high-quality, principled interaction rather than simply placing students together.

4.2. Theoretical Foundations of Cooperative Learning

Cooperative learning is grounded in social interdependence theory (Johnson & Johnson, 2009), sociocultural theory (Vygotsky, 1978), and the concept of the Zone of Proximal Development (ZPD; Vygotsky, 1978). Social interdependence theory highlights the importance of positive interdependence, in which individual efforts facilitate group success. Sociocultural theory further explains that cognitive development occurs through social interaction. Relatedly, the ZPD indicates that with the support of more knowledgeable others or collaborative peers, learners can achieve tasks they cannot accomplish independently. Together, these theories provide strong psychological and social support for cooperative learning.

Furthermore, cooperative learning is strongly aligned with three foundational SLA models: the Input Hypothesis (Krashen & Terrell, 1983), the Output Hypothesis (Swain, 1985), and the Interaction Hypothesis (Long, 1981). When students collaborate over texts, peer discussions simultaneously provide comprehensible input, elicit pushed output, and stimulate the negotiation of meaning essential for linguistic development.

4.3 Key Elements of Cooperative Learning

Specific structural elements distinguish cooperative learning from unstructured group activities. Two prominent frameworks are Johnson and Johnson's five elements and Kagan's PIES principles. Johnson and Johnson identify five essential elements: positive interdependence, individual accountability, face-to-face promotive interaction, interpersonal and small-group skills, and group processing. In comparison, Kagan summarizes key principles using the acronym PIES: Positive Interdependence, Individual Accountability, Equal Participation, and

Simultaneous Interaction. While both frameworks emphasize positive interdependence and individual accountability, Kagan specifically focuses on maximizing active student engagement through equal participation and simultaneous interaction across all groups.

4.3. Cooperative Learning Techniques and Classroom Applications

Several practical techniques can facilitate cooperative learning in language classrooms. Forming groups of four (or occasionally three) allows flexible transitions between pair and group discussions. In EFL contexts like Japan, providing learners with individual thinking time to take notes (in either L1 or L2) before discussion significantly lowers cognitive anxiety. Jacobs et al. (2002) also recommend assigning structured roles to group members, such as timekeeper, praiser, or facilitator, and providing functional target-language phrases for each role (e.g., "We have one minute left," or "That is a great idea"). These assigned roles promote equal participation and active involvement.

A representative technique that embodies these principles is the Round Robin. After an initial individual thinking period, each student takes turns sharing an idea until all members have contributed. This simple structure ensures equal participation and simultaneous interaction, reinforcing positive interdependence. Although cooperative learning is effective in various educational contexts, combining these structured social activities with graphic organizers offers distinct advantages for L2 reading comprehension, as discussed in the next section.

5. THEORETICAL SYNERGY: INTEGRATING GRAPHIC ORGANIZERS

The systematic integration of graphic organizers (cognitive scaffolding) and cooperative learning structures (social scaffolding) is theoretically anchored in three complementary frameworks: Second Language Acquisition (SLA), Content and Language Integrated Learning (CLIL), and Social-Emotional Learning (SEL). Together, these perspectives explain how visual mapping and peer

mediation synergistically foster cognitive, linguistic, and socio-emotional development in EFL reading contexts.

5.1. Second Language Acquisition: Input, Output, and Interactional Scaffolding

First, this integrated approach creates ideal learning conditions supported by major SLA theories. When learners work together on a shared graphic organizer, they discuss text interpretations, solve comprehension problems, and share their personal reactions. This collaborative dialogue encourages students to produce meaningful English through speaking and writing, generating both comprehensible and pushed output (Swain, 1985, 1995). At the same time, listening to peer explanations and reviewing each other's graphic organizers provides rich, comprehensible input (Krashen, 1982, 1985). Furthermore, based on the Interaction Hypothesis (Long, 1981, 1996), negotiating meaning during structured group tasks helps students notice language forms and make self-corrections, which supports language development. Combining the visual structure of a graphic organizer with oral group interaction provides multimodal scaffolding that helps reduce cognitive load.

5.2. CLIL: Realizing the 4Cs Framework in the EFL Reading Classroom

Second, Content and Language Integrated Learning (CLIL; Coyle, 2007; Coyle et al., 2010) offers a robust conceptual model through its interconnected "4Cs" framework: Content, Communication, Cognition, and Culture (Community). As Coyle et al. (2010) emphasize, CLIL developed not merely as an innovative language methodology in a globalized era, but as an educational response to broader societal demands for holistic competence. Integrating graphic organizers into cooperative reading tasks operationalizes all four dimensions concurrently, as summarized in Table 1.

Table 1 Operationalization of the CLIL 4Cs Framework via Graphic Organizers and Cooperative Learning

CLIL Dimension	Instructional Application
Content	Organizing, understanding, and summarizing main ideas and key text information through visual mapping.
Communication	Using English naturally as students discuss text meaning, share ideas, and give peer feedback using graphic organizers.
Cognition	Using graphic organizers to apply higher-order thinking skills, analyze text structures, evaluate details, and connect concepts.
Culture / Community	Building a supportive classroom community where students respect diverse perspectives and develop empathy.

Note. Adapted from Coyle (2007) and Coyle et al. (2010).

5.3. Social-Emotional Learning: Fostering Psychological Safety and Self-Regulation

Third, the Social and Emotional Learning (SEL) framework (CASEL, 2020) highlights the affective and interpersonal benefits of this integration. While cooperative learning is often used to improve academic achievement, its structured activities also help students develop five core SEL competencies: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making. In this integrated approach, graphic organizers serve as both

cognitive and emotional scaffolds. By making abstract text structures visual and clarifying task expectations, graphic organizers reduce reading anxiety and help students build self-confidence. This increased psychological safety lowers the affective filter, allowing learners to share their ideas comfortably and support one another in small groups.

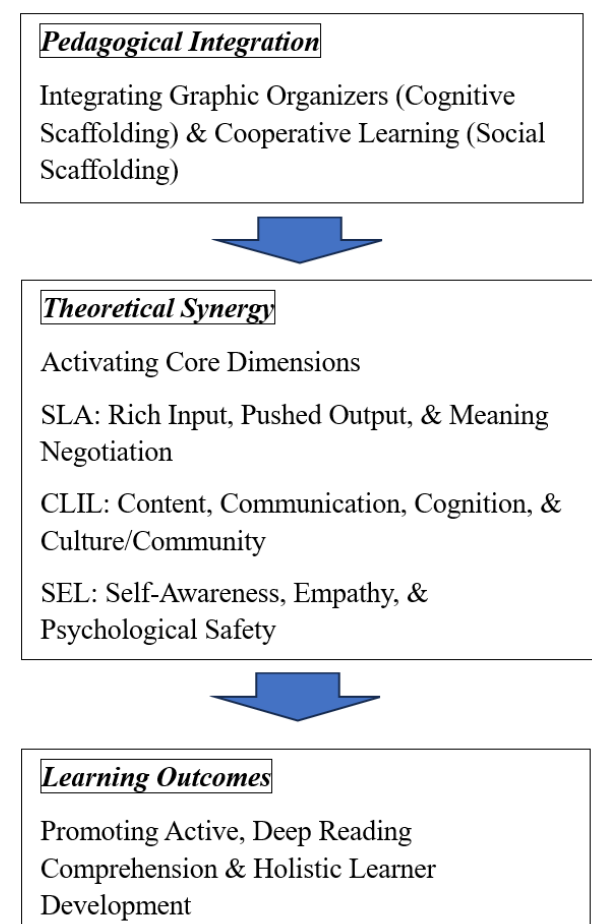


Figure 1. Conceptual flow of the synergistic framework for SLA, CLIL, and SEL in EFL Reading

In summary, integrating graphic organizers with cooperative learning brings together the core insights of SLA, CLIL, and SEL into a unified framework, as shown in Figure 1. While graphic organizers provide visual and cognitive scaffolding to clarify text meaning and structure (SLA input and CLIL content/cognition), cooperative learning structures offer social scaffolding that encourages active discussion and mutual emotional support (SLA output/interaction, CLIL communication, and SEL competencies). By addressing cognitive

processing, language development, and emotional well-being simultaneously, this combined model transforms EFL reading from a passive, individual task into an interactive, holistic learning experience.

The next section illustrates how teachers can apply this theoretical framework in the classroom through a concrete three-stage instructional procedure.

6. PRACTICAL CLASSROOM APPLICATION: A THREE-STAGE PROCEDURE

To bridge the theoretical framework with instructional practice, this section presents a structured, three-stage pedagogical procedure for EFL reading lessons: pre-reading, while-reading, and post-reading. Each stage combines a specific graphic organizer with a structured cooperative learning technique, operationalizing cognitive scaffolding, social interaction, and socio-emotional development.

6.1. Pre-Reading Stage: Activating Schema and Fostering Engagement

Instructional components

Graphic Organizer: K-W-L Chart (Ogle, 1986). A three-column visual framework consisting of What I Know (K), What I Want to Know (W), and What I Learned (L), designed to activate prior knowledge and elicit inquiry questions.

Cooperative Learning Structure: Write, Pair, Switch (Jacobs et al., 2002). A structured interaction pattern in groups of four that alternates individual reflection with timed, rotating pair discussions to promote equal participation.

Implementation Steps

Step 1 (Grouping): The teacher assigns students to heterogeneous groups of four (or groups of three when necessitated by class size).

Step 2 (Individual Schema Activation): Each student silently examines the title, illustrations, and

accompanying visual cues related to the passage to activate relevant background schema.

Step 3 (Completing the K and W Columns): Working individually, students record what they already know (K) and formulate questions about what they want to know (W), using multi-colored pens or simple sketches.

Step 4 (Initial Pair Sharing): Students form internal pairs (e.g., Student A with B, Student C with D) and share their notes under an explicit time limit (e.g., two minutes per speaker) signaled by the teacher.

Step 5 (Partner Switch): Students switch partners within the same group (e.g., Student A with C, Student B with D) and repeat the structured oral sharing.

Pedagogical Rationale

Providing dedicated Think Time during individual completion of the graphic organizer serves as an essential affective scaffold, helping to alleviate foreign language anxiety and supporting emotional self-regulation (SEL). Furthermore, structured turn-taking with explicit time constraints ensures individual accountability and positive interdependence (CL), while multiple low-stakes peer interactions provide varied comprehensible input and low-anxiety communicative output (SLA).

6.2. While-Reading Stage: Structuring Discourse and Constructing Meaning

Instructional components

Graphic Organizer: Mind Map / Concept Web.

A branching visual organizer that positions the central theme or thesis statement at the core, connecting primary branches for paragraph themes and secondary branches for supporting details. While inspired by Buzan's (1974) mind mapping, the organizer in this framework is adapted primarily as a pedagogical concept web to scaffold text-structure analysis rather than free-associative brainstorming. Additionally, for narrative passages, a story map can be utilized to visualize plot

structure, character development, and narrative arcs.

Cooperative Learning Structure: Round Robin with Assigned Roles (Jacobs et al., 2002; Kagan, 1994). A collaborative structure in which four group members co-construct a single shared artifact while executing distinct functional roles.

Implementation steps

Step 1 (Silent Reading): Students read the text individually, marking central ideas, paragraph themes, and key supporting evidence on their own rough worksheets.

Step 2 (Role Assignment): Within each group of four, students assume designated roles: Reader/Summarizer (presents designated sections orally), Recorder (draws and writes the shared Mind Map), Timekeeper (monitors section pacing), and Praiser/Encourager (provides supportive feedback).

Step 3 (Collaborative Mapping via Round Robin): Following the structural progression of the text, students take turns presenting their identified points clockwise. The group negotiates the logical placement of each concept before the Recorder incorporates it into the shared Mind Map.

Step 4 (Visual Elaboration): The group enriches the Mind Map using color coding, arrows, and symbols to represent hierarchical, causal, and contrastive relationships across discourse units.

Pedagogical rationale

The collaborative Mind Map transforms abstract discourse structures into tangible cognitive representations, reducing processing load during complex reading (Cognition; CLIL). The transition from individual processing to group synthesis facilitates authentic negotiation of meaning and spoken output (SLA). Distributing functional roles ensures equitable participation and eliminates free-rider effects (CL), while the presence of encouraging roles cultivates psychological safety and relational competence (SEL).

6.3. Post-Reading Stage: Critical Reflection and Affective Synthesis

Instructional components

Graphic Organizers: K-W-L-F-T Chart (proposed by the author), K-W-L (Ogle, 1986), or K-W-L-T (McKnight, 2010). The primary framework introduced here is the **K-W-L-F-T Chart**, which expands traditional models by adding **What I Felt (F)** for affective awareness and **What I Thought (T)** for critical reasoning alongside factual comprehension (L).

When teachers use the traditional **K-W-L** chart, students write about what they learned (L) and discuss whether the questions they formulated during the pre-reading stage (W) have been answered through cooperative interaction. Similarly, if the **K-W-L-T** chart is selected, students write summaries or personal statements (T: *What I Want to Tell/Talk About*) in sentences or short paragraphs and share them within their groups. In addition, this optional note box—**What I Want to Tell**—can also be incorporated into the K-W-L-F-T chart to help students organize speaking points for oral retelling and group discussion.

Cooperative Learning Structure: Three-Step Interview and Group Processing (Jacobs et al., 2002; Kagan, 1994). This structure combines a paired interview routine with team reporting and collaborative self-evaluation of social skills.

Implementation steps

Step 1 (Individual Reflection and Completion): Students complete the L column for factual understanding, the F column for affective reactions, and the T column for personal opinions and critical viewpoints.

Step 2 (Pair Interview): In pairs (Student A and Student B), Student A shares their feelings and critical thoughts for two minutes while Student B engages in active listening and note-taking. Upon the teacher's signal, roles are reversed for another two minutes.

Step 3 (Group Reporting): Returning to their four-member teams, each student delivers a concise summary of their partner's affective and cognitive responses in a round-robin format.

Step 4 (Group Processing): Teams spend two minutes reviewing their collaborative performance against a cooperative checklist, reflecting on active listening, mutual encouragement, and psychological safety.

Pedagogical rationale

The K-W-L-F-T chart bridges text-level comprehension, cognitive processing, and socio-emotional development. Prompting learners to articulate emotional responses (F) lowers the affective filter and fosters emotional self-regulation, while documenting critical reflections (T) scaffolds higher-order thinking (CLIL Cognition; CASEL Self-Awareness). Structured pair interviews scaffold oral retelling without the pressure of unguided speech (SLA Output; Relationship Skills), and regular group processing reinforces interpersonal accountability and empathy.

7. CONCLUSION AND PEDAGOGICAL ISSUES

This paper has argued that integrating graphic organizers into cooperative learning environments holds strong promise for enhancing EFL reading pedagogy. By providing multimodal scaffolding, this integrated approach aligns with foundational SLA theories—facilitating comprehensible input, meaningful output, and authentic negotiation of meaning—which ultimately fosters deeper text comprehension and vocabulary acquisition. Furthermore, this pedagogical synergy addresses the core components of both Content and Language Integrated Learning (CLIL) and Social and Emotional Learning (SEL), promoting learners' cognitive, linguistic, social, and emotional development. The visual scaffolding of graphic organizers and the interpersonal structure of cooperative learning reinforce each other, providing psychological safety and cognitive clarity for learners across various proficiency

levels, from primary education to adult learning.

To validate and expand upon this pedagogical framework, future empirical studies employing both quantitative and qualitative methods are strongly recommended. Such research should investigate not only traditional language gains, such as reading comprehension and vocabulary retention, but also affective and psychological factors, including foreign language anxiety, learner self-efficacy, and social attitudes.

Finally, the successful implementation of this integrated approach requires systematic training for both teachers and students. Teachers need pedagogical guidance on how to select appropriate graphic organizers and structure cooperative roles, while learners must be guided in collaborative skills and emotional self-regulation. Through thoughtful integration and structured practice, graphic organizers and cooperative learning can transform the EFL reading classroom into a collaborative, intellectually engaging, and emotionally supportive learning environment.

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