

INTEGRATING MIND MAPPING AND DESIGN THINKING IN ENGLISH LANGUAGE TEACHING: A METHODOLOGICAL FRAMEWORK

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Abstract

Twenty-first-century English language classrooms increasingly demand strategies that develop not only linguistic accuracy but also creativity, collaboration and critical thinking. This article proposes a methodological framework that combines two learner-centred strategies: mind mapping, a visual technique for organising ideas around a central concept, and design thinking, a human-centred, iterative problem-solving process. Drawing on dual coding theory, cognitive load theory, constructivism and task-based language teaching, the article explains why the two strategies complement each other and presents a five-stage instructional model (Empathise, Define, Ideate, Prototype, Test) in which mind maps serve as the cognitive and linguistic scaffold of each stage. Practical classroom procedures, a sample four-lesson unit, an assessment rubric and guidelines for teachers are provided, and the advantages and limitations of the approach are discussed. The framework is intended for secondary school, college and university EFL contexts at B1–C1 levels.

Keywords: Mind mapping, design thinking, English language teaching, EFL methodology, task-based learning, vocabulary development, learner autonomy, 21st-century skills.

Introduction

Traditional approaches to teaching English as a foreign language (EFL) have long been criticised for emphasising memorisation of rules and word lists at the expense of meaningful communication. Although communicative language teaching reshaped many classrooms, a persistent gap remains between what learners know about English and what they can do with it. Learners often struggle with three interrelated problems: retaining new vocabulary over time, generating and organising ideas for speaking and writing, and using the language to solve authentic problems rather than to complete isolated exercises.

Two strategies that originate outside applied linguistics offer promising responses to these problems. Mind mapping, popularised by Buzan and Buzan [1], represents a topic as a radiating network of keywords, images and colours. Design thinking, described in its modern form by Brown [2] and elaborated for educational settings by Razzouk and Shute [3], is a non-linear process in which participants empathise with users, define a problem, generate ideas, build prototypes and test them. Each strategy has been discussed separately in educational research; however, their systematic integration in English language teaching has received comparatively little methodological attention.

The aim of this article is to develop and justify a practical methodological framework for combining mind mapping and design thinking in EFL lessons. The article addresses the following research questions:



1. What theoretical principles justify combining mind mapping and design thinking in language teaching?
2. How can mind maps be used to support each stage of the design thinking process in an EFL classroom?
3. What classroom procedures and assessment tools allow teachers to implement the framework effectively?

2. Theoretical Background.

2.1 Mind mapping and language learning. A mind map places a central concept in the middle of a page and extends branches that carry related keywords, symbols and images [1]. Several strands of cognitive and educational theory explain its value. According to Ausubel's theory of meaningful learning, new information is retained more effectively when it is anchored to what the learner already knows [4]; a mind map makes this anchoring visible. Novak and Gowin's concept maps are based on the same principle, although they impose hierarchical structure and labelled propositions that mind maps typically lack [5]. Paivio's dual coding theory holds that information encoded through both verbal and imagery systems is more likely to be remembered [6], which is consistent with the combination of words, colours and pictures in a mind map. From the perspective of cognitive load theory, organising information into chunks reduces the burden on limited working memory [7].

Empirical findings are encouraging but not uniform. A meta-analysis of studies on concept and knowledge maps reported that learning with maps generally produced better outcomes than reading or listening to text-based material [8], whereas experimental work on the mind map study technique found improved recall in some conditions but no automatic superiority over other note-taking methods [9]. These findings suggest that the benefits depend on how maps are used, especially on whether learners construct them actively rather than copy ready-made versions.

In language teaching, mind maps have been applied mainly to vocabulary organisation, pre-writing and reading comprehension. Nation's work on vocabulary learning emphasises that words are learned better when learners meet them in varied, meaningful relationships and retrieve them repeatedly [10]; semantic and thematic branching in a mind map creates exactly such relationships.

2.2 Design thinking in education.

Design thinking is commonly described as a human-centred approach that moves through stages of understanding users, defining problems, generating ideas, building prototypes and testing them [2][11]. In its best-known educational form, associated with the Stanford d.school, the stages are Empathise, Define, Ideate, Prototype and Test, and learners may return to earlier stages as new insights appear. A review of the educational literature concluded that design thinking fosters creativity, collaboration and a tolerance for ambiguity, while also noting that rigorous empirical evidence on learning outcomes remains limited [3]. Scheer, Noweski and Meinel argued that the process translates constructivist principles into classroom action, because learners build knowledge by working on authentic, open-ended problems [12].



2.3 Why the two strategies fit together. Design thinking supplies purpose, context and authentic communication: learners need English to interview users, negotiate meaning in teams, explain ideas and present solutions. Mind mapping supplies structure and linguistic support: it helps learners record observations, group vocabulary, organise arguments and plan texts. Put differently, design thinking answers the question "Why am I using English?", while mind mapping answers "How can I organise what I want to say?"

The combination also aligns with task-based language teaching (TBLT), in which meaning-focused tasks with a clear outcome drive language use and learning [13][14]. A design challenge is an extended task with a real outcome; mind maps function as the planning, rehearsal and reflection tools that surround it. Finally, the approach is consistent with Vygotsky's view of learning as socially mediated [15] and with Swain's output hypothesis, which emphasises the role of producing language, not just receiving it, in acquisition [16].

3. Methodology

The study uses a design-based approach combining theoretical analysis, comparative analysis of existing methods and classroom experimentation. The framework was piloted at [institution] during the [year] academic year with [n] students (age [range], level [CEFR level]). The experimental group ([n] students) followed the integrated mind mapping–design thinking model, while the control group ([n] students) studied the same topics using the course textbook and conventional communicative activities. Data were collected through a pre-test and post-test of vocabulary and writing, a speaking assessment scored with an analytic rubric, a learner questionnaire on motivation and teacher observation notes.

Note to the author: complete the bracketed fields with your actual data. Do not report statistics that were not collected.

4. The Integrated Framework

The framework rests on five principles. First, learner-constructed maps: students create their own maps, because construction, not reading, drives learning. Second, keywords over sentences: each branch holds a word or short phrase, which keeps the map scannable and pushes learners to retrieve language when they speak or write. Third, language focus in every stage: each design thinking stage is linked to explicit language functions and vocabulary. Fourth, iteration: maps are revised as the project develops, so that they document the learner's changing understanding. Fifth, collaboration: maps are built in pairs and groups to stimulate negotiation of meaning.

The teacher acts as a facilitator who sets the challenge, models map construction, monitors language use, provides targeted language input at the point of need and organises feedback. Linguistic accuracy is not neglected: teachers should plan brief focus-on-form moments (for example, a mini-lesson on question forms before interviews or on conditionals before ideation) and collect typical errors observed during group work for delayed correction.

5. Classroom Implementation: A Sample Unit

The following unit illustrates the framework. It is designed for four 80-minute lessons at B1+ level and may be adapted for other levels and time frames.

Unit theme: Healthy and sustainable school life Design challenge: How might we reduce plastic



waste in our school? Language goals: vocabulary related to environment and consumption; question forms; cause and effect; modals of suggestion; first and second conditionals; persuasive presentation language.

Lesson 1 (Empathise and Define). Students activate prior knowledge with a whole-class mind map titled Plastic. The teacher introduces the design challenge and models an interview-planning map. In pairs, learners prepare and conduct short interviews with classmates, canteen staff or teachers (in English where possible), recording answers on observation maps. Groups then merge their data into a problem-analysis map and write one point-of-view statement. Homework: students refine their individual maps and add five new words they needed but did not know.

Lesson 2 (Ideate). The teacher presents a mini-lesson on suggestions and conditionals. Groups brainstorm solutions on a large mind map, cluster the ideas, and vote on the best one to two. Each group prepares a two-minute pitch using the map as a speaking aid. Homework: write a short paragraph explaining the group's chosen idea.

Lesson 3 (Prototype). Groups design their prototype (for example, a recycling campaign poster, a short video script or a school guide). They begin with a planning map, assign roles, and produce a draft. The teacher circulates, notes language problems and offers on-the-spot support.

Lesson 4 (Test and Reflect). Groups present their prototypes. The audience records feedback on feedback maps. Groups revise their work in light of the comments. The unit ends with an individual reflection map (What I learned about English / about teamwork / about myself) and a short written reflection of 120–150 words.

6. Assessment

Assessment should capture both language development and the processes the framework aims to cultivate. Three complementary tools are recommended: (1) the mind maps themselves as evidence of planning and vocabulary organisation, (2) the final products and presentations, and (3) self- and peer-assessment. Table 2 provides an analytic rubric that can be used for maps and products.

Table 2. Analytic rubric for mind maps and design products (adapted for EFL use).

Criterion	4 (Excellent)	3 (Good)	2 (Developing)	1 (Beginning)
Organisation of ideas	Logical, clearly grouped, hierarchy of ideas is evident	Mostly logical with minor gaps	Partly organised, some unrelated items	Ideas unconnected or unclear
Vocabulary range and accuracy	Wide, precise, topic-appropriate	Adequate range, few errors	Limited range, some errors affect meaning	Very limited, frequent errors
Use of target grammar	Accurate and varied use of target structures	Generally accurate	Frequent errors, limited use	Target structures absent
Collaboration and process	Active participation and responsive to feedback	Participates consistently	Participates occasionally	Minimal participation
Creativity and relevance to the challenge	Original and well matched to user needs	Relevant with some originality	Partly relevant	Not relevant



7. Results and Discussion

Insert the results of your experiment here: pre-test and post-test means for both groups, the difference between them, any statistical test used (for example, an independent-samples t-test or Mann–Whitney U test) and its significance level, and a summary of questionnaire and observation findings. Present the main results in a table or figure.]

When interpreting the results, the following points should be considered. First, compare the findings with those of earlier studies on maps and design thinking [3][8][9], noting agreement and differences. Second, discuss whether gains were larger in vocabulary, writing or speaking, and explain why the framework might affect these areas differently. Third, comment on learners' motivation and engagement as reported in questionnaires and observed in class. Fourth, report any problems that arose during implementation, such as overuse of the mother tongue in group work or uneven participation.

8. Advantages, Limitations and Recommendations

The framework gives learners an authentic reason to use English while providing a visible structure that supports vocabulary retention, idea generation and planning. It promotes autonomy, because students decide how to organise and develop their ideas; it fosters collaboration and creativity; and it produces tangible evidence of learning in the form of maps and products. The approach is flexible and requires only paper, markers or free digital tools.

1. Introduce mind mapping first in simple vocabulary tasks before combining it with a full design challenge.
2. Choose challenges that are relevant to learners' lives and have real users.
3. Provide language input at the point of need and plan short focus-on-form moments.
4. Require English for key tasks (for example, interview questions and final presentations) and allow brief use of the first language for clarification.
5. Assess process and language, not only the final product.
6. Combine hand-drawn and digital maps so that learners benefit from both.

9. Conclusion

Mind mapping and design thinking address complementary needs in EFL teaching. Design thinking provides an authentic, collaborative and iterative problem-solving context for communication, while mind mapping organises ideas, vocabulary and language functions at each stage of that process. The five-stage framework presented in this article, together with the sample unit and assessment rubric, offers teachers a concrete and adaptable way to integrate the two strategies. Although the approach appears promising on theoretical grounds, further empirical research with larger samples, different age groups and delayed post-tests is needed to determine its long-term effects on language proficiency.

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