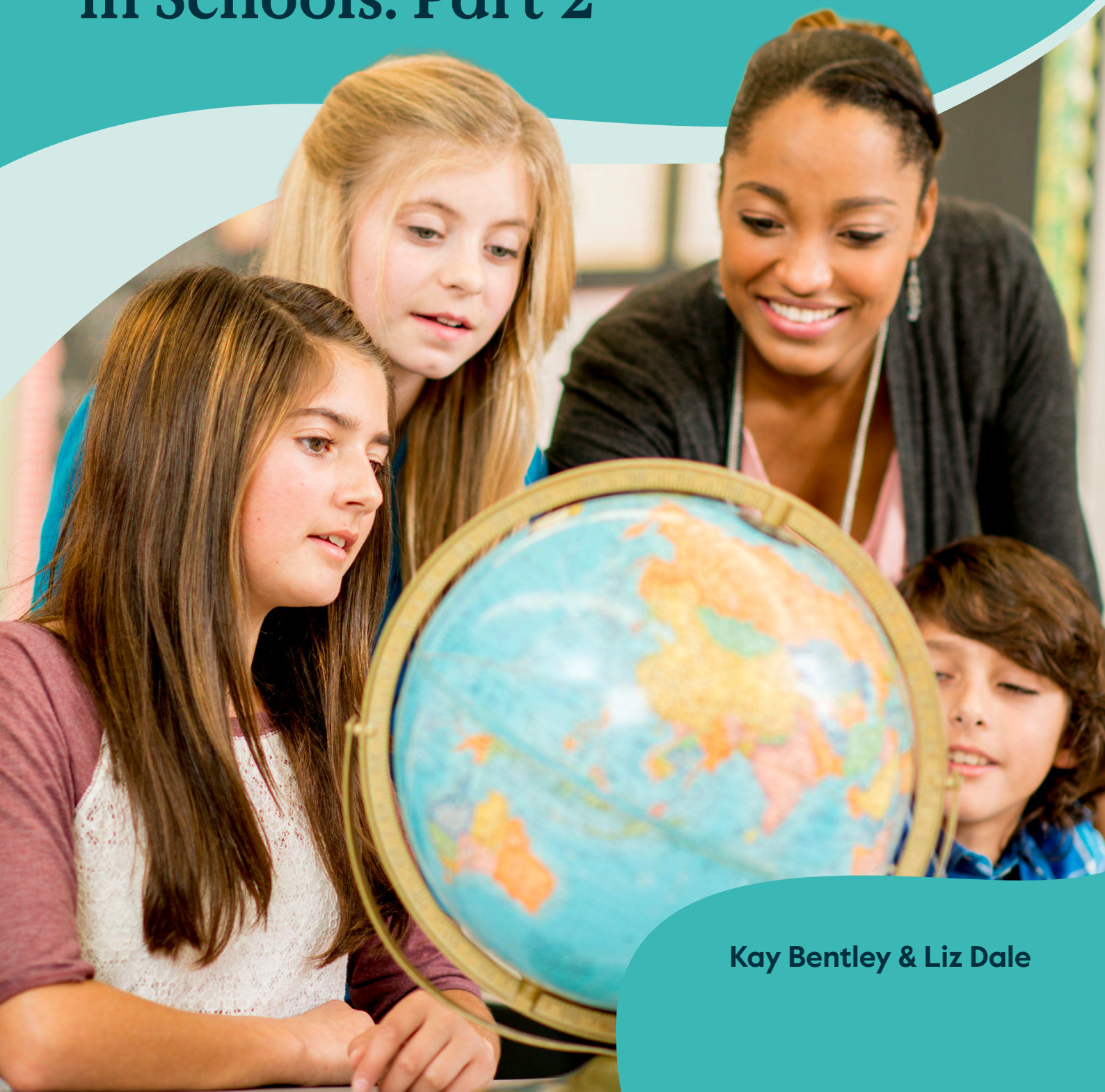
CAMBRIDGE

Cambridge Papers in English Language Education

English as a Medium of Learning (EML) in Schools: Part 2



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need to think
Beyond the pale
b) in someone else's sha
c) outside the box
mug
vase

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Introduction: What is English as a Medium of Learning (EML)?

Part 1 introduced what English as a Medium of Learning (EML) involves in schools today. It mentioned the rise in EML programmes globally, and how these programmes differ. Key differences are types of schools, subjects taught, amounts of time dedicated to subject learning in English and the different approaches that come under the umbrella of EML. These could be CBI, CLIL, EMI, and ELT with subject-specific input within course book units. Part 1 also includes what teachers say about the benefits and challenges both they and their learners face when implementing EML programmes.

Part 2 focuses on how teachers can deliver effective EML programmes through planning in general as well as lesson planning, giving explanations, asking questions, and modelling language needed to learn about different school subjects. Teachers will gain knowledge of an abundance of support strategies and their purposes, and will find out how to give feedback and evaluate progress learners are making while learning about subject-specific concepts in English.

CLIL came to the attention of teachers after the publication of course books, such as Cambridge's:

- *More!* (2008) with 'CLIL (cross-curricular learning) in subjects such as Maths, Geography, Music, Science...'.
- *Eyes Open* (2015) with 'extra' CLIL pages on e.g. Biology, Art, Technology and Chemistry.

Although this was termed 'soft CLIL', with perhaps only one 45- or 60-minute subject lesson each week, the sections or pages within units in a language course enabled teachers to gain confidence in teaching and developing learners' knowledge of subject concepts in English.

In ELT contexts, teachers began to explore subject concepts with learners more deeply, often using multimedia.

EML teachers also use multimedia to present subject concepts; encourage learners to locate subject information online and produce digital, subject-specific projects.

CLIL and dual language teaching handbooks for subject and language teachers, which were published during this period include:

- *Uncovering CLIL* (2008) examining CLIL at primary, secondary and vocational levels.
- *CLIL: Content and Language Integrated Learners* (2010): an overview of CLIL from three leading practitioner-theorists.
- *CLIL Activities* (2012) aimed at subject and language teachers in secondary schools.
- *Putting CLIL into Practice* (2015) giving guidelines for guiding input and supporting output.
- *The Roles of Language in CLIL* (2015)
- *CLIL Essentials* (2017): practical ideas and exercises
- *Beyond CLIL* (2021): new developments, pluriliteracies.



These books provided scaffolding ideas to promote critical thinking, intercultural competence and new approaches to subject teaching, all of which researchers identify as essential for successful EML.

Cultural awareness in ELT was also identified as needing to be more reflective in EML contexts. It was stressed that learners should be given, 'opportunities to reflect and understand themselves in relation to other cultures and languages.' (Pratt & Foley, 2021) There were more opportunities to do this in EML programmes because of the wider range of subject input learners experienced.

Pluriliteracy rather than biliteracy was also promoted. The term pluriliteracy was developed by the Graz Group of CLIL researchers, trainers and teachers. They explained that the approach puts subject literacy development in more than one language at the core of learning so that learners can become 'literate in several subjects and languages.' (Coyle & Meyer, 2021) Visual and digital literacy are also developed.

Visual literacy involves understanding and interpreting multi-modal subject content presented in images, animations, video, diagrams, patterns etc.

Digital literacy develops learners' knowledge of how to use online tools, search engines, and an understanding of how to create digital content. Both visual and digital literacies are 'fundamental to the acquisition of subject-specific literacies.' (Coyle & Meyer, 2021)

Developing subject literacies has become an integral part of EML. Subject-specific literacy is integrated with English literacy to help learners understand, produce and communicate facts, concepts and procedures presented in subject topics.

In addition, an analysis of teacher and learner needs should be undertaken so that appropriate training can be put in place before programmes start, including considering the following questions:

- Which methodology is appropriate?
- How can we support learners?
- How can we evaluate the learning of subject content and language?

As a result of widespread interest, and an abundance of questions about implementing subject-specific learning in English language programmes in schools, this Paper (Part 2) explores:

- How can schools deliver EML programmes effectively?
- How can teachers plan for subject learning in EML?
- Which support strategies are helpful in EML lessons?
- How can teachers evaluate learners' progress in EML?

Part 1 addressed the following issues:

- What are the key approaches to EML?
- Why implement EML programmes in schools?
- What can be achieved in doing so?
- What are the challenges that teachers face?

Points made in both papers will draw on reference to research from around the globe.

Delivering effective EML in school

The challenges that many teachers face in EML contexts (see English as a Medium of Learning: Part 1 raise several key issues. These need to be addressed before, during and after implementing EML in the physical or online classroom. Key issues include:

1. Teachers' language and learners' language
2. Planning
3. Support strategies
4. Evaluating learners

Teachers' language

- **Explaining**

Teachers working in EML contexts will need to explain subject-specific terminology. Whether in primary or secondary lessons, explaining is more challenging than defining or describing. For example, learners need to know the characteristics of different landscapes: *Deserts are hot and dry. Rainforests are hot and humid.*

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However, understanding why some animals can live in hot deserts is more demanding, so teachers should practise simple explanations: *Some animals, like snakes, hide under the sand. They only come out at night when it's cold. Some animals, like camels, get water from desert plants.* While this is manageable at early stages, older primary and secondary learners will need to know why hot and cold desert landscapes are changing. Geography teachers want learners to understand how geographers think, speak and write. They need to introduce subject-specific terms, such as *global warming, drought and erosion;* and subject-specific language structures (for example, passive forms: *As the sand is blown …*) and also the language of cause and effect. EML teachers need to prepare this language before giving explanations to learners. Joint preparation by a subject specialist and a language specialist can be helpful.

- **Questioning**

Research has explored the types of questions teachers ask in EML settings, to make sure 'the questions they posed covered a complete set of knowledge and cognitive dimensions' (Valverde Caravaca, 2019). This is because in primary and secondary EML contexts, questions should develop higher-order thinking to make content and language learning more meaningful. However, data collected indicated that questions involving higher-order thinking, such as analysing, evaluating and creative thinking, were missing.

A challenge for teachers, especially at upper primary and secondary stages, is therefore to plan prompts and questions that encourage longer answers with more advanced language, elicit reasoning, and encourage critical and creative thinking to develop CALP. For example:

- *Tell me more about …*
- *What makes you think that?*
- *How are these different?*
- *And another example is …*

If questions or prompts are not in published materials, teachers should prepare them and either write them on the board or have them to hand for reference.

- **Responding, managing and modelling**

Before delivering EML lessons, teachers should predict questions that learners may ask about subject concepts and prepare possible responses. Teachers also need to be ready to respond to learners spontaneously, for example, by clarifying any misunderstandings about subject concepts. This may involve paraphrasing, providing further examples or using images and diagrams to make the language of concepts comprehensible.

To manage the EML classroom, teachers need to consider the language they will use to set up subject-specific collaborative tasks. Examples include: setting up science experiments, organising practical maths investigations, and explaining steps to carry out geography, art or other subject-specific projects. In addition, teachers should think about the language they will use to:

- pair or group learners so that effective collaboration can take place
- remind learners of the task
- check progress and manage any difficulties during the task
- end the task so learners feel they have done their best to achieve the task outcome.

Creating, managing and maintaining a positive classroom environment by praising, encouraging and giving on-going feedback to learners, in English, is also important. Learners need the reassurance that they can learn both new subject content and new language.

Modelling language includes learners hearing examples of BICS (Basic Interpersonal Communicative Skills) so that they can then use them for pair and group tasks, or general classroom interaction. Examples include:

- *It's your turn.*
- *Let's do this number.*
- *Can you help me / us please?*

Language to develop subject-specific and generic academic language also needs to be modelled. This involves developing learners' CALP (Cognitive Academic Language Proficiency) For example, passive and conditional forms, past perfect and reported speech as well as advanced vocabulary. Examples are:

- Passive and past perfect: Sonar was designed after scientists had studied the movements of bats and dolphins.
- 2nd conditional: If Roman engineers hadn't developed concrete, they wouldn't have been able to build strong walls, some of which still exist today.
- Reported speech: The teacher commented that our group should have attempted to use a wider range of tones in our digital art work.

Modelling is also important to support oracy and reading and writing skills across the curriculum. Oracy skills include active listening, pronouncing words clearly, and using subject-specific vocabulary during collaborative work and when presenting. To develop reading and writing skills, teachers should provide models of subject-specific text types, such as instructions for making a volcano, a description of an active volcano, and an explanation of how a volcano erupts.

Planning

It is important that teachers have clear content and language objectives for each lesson, whether physical or online, and that learners are aware of these objectives. For example, to understand how animal characteristics and habitat interact to endanger animals; to be able to identify animal and habitat characteristics; to be able to explain orally and in writing how changes in habitat endanger animals. The objectives are from the Dutch biology curriculum, and involve knowing animal features (*snout, beak, wing, paw, webbed feet, pads, claws, fur, skin, feathers*) and habitats (*nests, trees, hollows, rocks, caves*), how these are suitable for different habitats, adjectives to describe them and language structures to explain

cause and effect. A focus on language 'raises awareness of the power of language and language forms ... (and) ... an awareness of how language can be used' (Bower, 2017).

Teachers need to locate age-appropriate materials to present the topic. At the start of a lesson, activating learners' knowledge of the subject topic is vital.

In addition, teachers need to locate age-appropriate materials to present the topic. At the start of a lesson, activating learners' knowledge of the subject topic is vital. There are EML contexts where it is acceptable for learners to use L1 at this stage, because they may know vocabulary or chunks of language to describe animals and habitats in their L1. Accept, translate and move on, or highlight any words that may be similar in other home languages and in English. 'Although teachers may carefully plan when and how languages are to be used, children themselves use their entire linguistic repertoires flexibly' (García, 2009).

What is different in EML contexts is that each step in a lesson plan usually takes longer than a subject lesson in the L1, and teachers also need to allow for longer wait time between questions. Furthermore, it is important that EML teachers include cross-curricular links related to subject content that learners are exploring. For example, in the animals and habitats example above, asking learners about animal descriptions in poetry (in English classes) and paintings (in art classes), or landscape characteristics (in geography classes). Depending on the topic, learners may be able to think of cross-curricular links themselves.

When planning, teachers can consider these questions:

1. Presenting and consolidating new subject content
2. Language support and development

1. **Presenting and consolidating new subject content:**

   What do learners know already about the subject topic and what will they know / be able to do after this lesson?

   Which tasks will the learner do to consolidate subject learning?

When presenting new subject content teachers need to consider tasks learners will do in the subject they are studying. Here are examples of science tasks for secondary students from different countries. Key instructional vocabulary is highlighted to focus learners on the tasks.

Mexico	Spain
Describe the characteristics and movement of the Solar System. **Explain** gravity's role in the movement of planets.	**Explain** why the force of gravity keeps the planets orbiting the Sun, and the Moon orbiting the Earth.
Analyse the ways that electrical energy is generated, and **describe** how renewable energy works.	**Compare** renewable sources of energy and **assess** their impact on the environment.
Brazil	**Turkey**
Use the 3D models to **analyse** the role of the angle of the axis of rotation of the Earth relative to its orbit during the different seasons.	**Make suggestions** about the reasons why we have different seasons.
Discuss and **classify** different sources and types of energy, and energy used in homes and cities.	**Use** the Friends of the Earth activity pack on air quality around schools. **Find out** what makes the air polluted.

EML teachers can now use Generative AI (GenAI) tools to create a lesson plan or part of it for a subject-specific topic. They can then decide to use it, refine it or adapt it to fit the needs of different learners. This is called adaptive learning.

2. **Language support and development:**

   What language do learners need to understand the subject input, show understanding of the subject content and take part in activities?

Working through a plan, like the example in Table 1, can help teachers to consider all the language demands of a subject lesson in English. This type of planning also helps teachers to see the interrelationship between subject content, language and thinking skills. It might be useful to add a column of knowledge that learners bring from the L1 classroom and brainstorm ideas on how to exploit this in your classroom.

Table 1 shows planning for a science lesson in English. The experiment can be used with pupils in mid- to late-primary or the first year of secondary. The subject vocabulary and language for thinking would both become more detailed in late primary and secondary.

Learning outcomes	• To enable learners to identify waterproof materials based on their properties (what they are made of). • To practise making predictions. • To practise following instructions for an experiment. • To practise giving reasons. • To enable learners to decide if a test is fair or not.
Tasks	**Pairwork:** 3. Learners make predictions about waterproof materials (activate prior knowledge). 4. They test objects in water and give a reason for the result. 5. They write about their findings in a table. 6. They decide if the test was fair and say why or why not.
Key subject vocabulary	**Adjectives** *waterproof, watertight, fair* **Verbs** *leak, drip, let (the water) through, pour, time* **Nouns** *water, funnel, measuring cylinder, cotton, wool, leather, nylon*
Language for critical thinking	**Predicting:** *I think it will (leak / let the water through / stop the water).* *I don't think it will (leak / let the water through / stop the water).* **Giving reasons:** *It's (not) waterproof because it's (made of) ...* **Applying knowledge: (Past Simple)** *We saw / found that X is waterproof / let the water through / X isn't waterproof / leaked / stopped the water.*
Classroom language (interpersonal skills)	**Making suggestions:** *Let's try the X next.* *We should / could / need to (keep the amount of water the same).* **Doing experiments:** *Look!* *It's leaking / stopping the water. Let's write it down.* **Collaborating:** *Can I have the X, please?* *Can you pass me the X?* *Here's the ...* *Yes, here it is.*

Table 1: Planning for a science lesson in English[1]

1 Adapted from Alison Talbot. (29 October 2020.). Cambridge Mathematics and Science CLIL Pack. (Bahcesehir edition.). Alan Cross, Cherri Moseley, Emma Low, Fiona Baxter, Janet Rees, Jon Board, Liz Dilley.

Cross-curricular links

Maths: (Measuring liquids) Learners find out how much water (in grams) they used to test the materials. Which material soaked up the most water and which the least?

Environmental Studies: (Saving water) For one day find out how much water you use to brush your teeth and wash your hands. Do a class tally to see who uses the smallest amount of water. In a small group think of three reasons why is it important to save water.

Support strategies

All new subject language needs to be supported. Primary and secondary EML teachers therefore need knowledge of a range of effective support strategies and an understanding of which ones to use with learners at different stages of school. Teachers should consider how they will support new subject input, as well as how to support learners to produce accurate and fluent oral and written language for different subjects. If a school facilitates collaboration between subject specialists and language specialists, subject specialists can contribute strategies for supporting new subject input, and language specialists can contribute ideas for supporting accurate and fluent oral and written language.

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In EML programmes additional classroom support is required. Teachers have highlighted making, 'pedagogical adaptations in the classroom, such as repetitions of key subject terms, slowing down the teaching pace, use of board to spell out disciplinary language, ...and the design of bilingual glossaries.' (Dafoux, 2021) Scaffolding strategies are particularly necessary at the start of new EML programmes and when learners have particular needs.

Tasks for individuals, in pairs or in groups also need to be supported through multi-sensory, multimedia experiences, such as input through digital animation, music and interactive tasks. Some learners may require additional support strategies and need to use them for longer than others. The key to supporting learners effectively is to know the language and subject demands of the concepts being learned and the learning needs of the pupils.

- **Vocabulary support**

This can take the form of subject-specific word banks with images and vocabulary presented in sense units rather than alphabetically. For example, in primary schools doing the topic of properties of materials, present opposite adjectives to describe materials with symbols: *soft* ↔ *hard*, *smooth* ↔ *rough*. Any familiar vocabulary should be presented before new words, to reassure learners.

Word families showing how the same root forms many different words can be useful, particularly in secondary schools, e.g. *accurate, accuracy, accurately, inaccuracy, inaccuracies, inaccurate*. Examples for academic words can be found at https://www.eapfoundation.com/vocab/academic/awllists/

Primary and secondary teachers can also provide glossaries with words in English and in the L1 to support vocabulary learning. Learners can then be encouraged to find any similarities or differences between words. Does the word look the same, and after listening to it, does it sound the same? Many science and technology words are similar in different languages. For example, mammal and reptile in English, mamalia and reptilia in Malay, mamífero and reptil in Spanish; computer in English, komputer in Malay, computadora in Spanish. Helping learners to notice what's similar and what's different (spelling and / or sound) helps to make subject-specific vocabulary more memorable.

It is common in primary classrooms in EML contexts to see word walls with posters displaying familiar and new subject-specific vocabulary presented with labels or captions. These are a good idea in secondary classrooms too, and many publishers supply age-appropriate English language wall displays for language learning and subject-specific vocabulary.

Images or learner drawings can help learners remember new words. It is also useful to prepare topic vocabulary and high-frequency words with difficult spelling patterns, such as again, *called, could, would* on handouts. These encourage learner autonomy because learners can take responsibility for using the handout when they need to check topic vocabulary and spelling for written work.

Most of all, it is important to emphasise new subject vocabulary in context and to help learners notice collocations such as, 'a minor earthquake', 'a repeated pattern' 'an arid ecosystem' 'growing number'.

- **Sentence support**

Both sentence and question starters are helpful strategies to support communication and to boost learner confidence to ask questions. Starters also help learners to use word order accurately.

Examples of sentence starters include:

- *I agree we can / could / should_____.*
- *Stet*
- *We think the concept map / video / animation helps us to _____.*
- *We analysed / examined / evaluated the _____.*
- *This drawing / diagram / image shows / represents / has evidence of _____.*

Examples of question starters include:

- *What is / does this ...?*
- *How does / can the ...?*
- *Why is this a ...?*
- *How can we make ... better / improve ...?*

Both sentence and question starters are generative so can be used in any subject topic with a few adjustments. Sometimes question starters are called 'think alouds' because they encourage the development of cognitive as well as communicative skills.

Sentence gap-fills are another support strategy and learners should know why they are using them. For example, before writing a paragraph on animal characteristics, learners complete sentences using subject-specific vocabulary.

Bats vary in ..... . The largest ones have a ..... of up to 1.5 metres; others are only 15 cm wide.

Bats, rats and foxes have similar ..... . They have large, pointed ..... and grey or brown ..... .

Bats have long arms and hands with especially long ..... .These are connected to the legs with ..... , which form their wings. The muscles in the membranes make it easy for a bat to fly.

When resting a bat usually hangs ..... with its ..... connected to a hard surface.

wingspan **size** **ears** **fur** **mouths** **upside down** **claws** **fingers** **membranes**

Substitution tables provide a different type of support because learners need to decide which words to use within each language category. For example, after looking at a plant and how it grows, learners together choose the words to describe them. It helps learners if teachers ask what type of text they are reading and how they identified it. This enables learners to analyse text features that can be put into an organiser so they can visualise text content. What is different between reading texts in an ELT context and reading for EML is that there are far more factual texts in subject teaching compared with those in ELT course books.

We can see There is / are	a some	big ↔ small long ↔ short thin ↔ thick	root / roots. stem. leaf / leaves. flower / flowers.

- **Text support**

To support learners when reading or writing texts, teachers should provide examples of different text types used in their subject. These can include instructions, procedures, descriptions, explanations, narratives, discussions, and balanced arguments about subject concepts.

In EML, texts should have an abundance of images because 'pictures have a dual function in that they contribute to making the material attractive and engaging and they also give support to comprehension' (Watkins, 2018). Teachers can plan which language features of a particular text type learners will focus on to actively explore language and elicit the purpose of the text. 'A focus on language ... includes the development of children's awareness of language forms and uses, and the ability to critically analyse these' (Gibbons, 2021).

Talking with learners about texts, their purpose, and the language and features of layout will enable them to become more confident at reading and writing text in English.

Questions to help learners notice language forms in a text include:

- Which words describe the two rivers? (adjectives)
- How do we know the rivers are different? (comparative forms)
- Which of the rivers is polluted and why? (short explanation)

In secondary schools, these types of questions could be prepared or asked by the subject teacher or by the English teacher. Teachers can ask progressively demanding questions about a text, too. For example, Which energy sources did you read about? (remembering subject-specific vocabulary) Which sources are renewable? (understanding a concept) Why is it important to use renewable energy? (giving reasons).

Teachers can also guide learners to notice the language of, for example, cause and effect, impersonal statements, expressing purpose and stating quantity. This helps to develop subject literacy.

With teacher guidance, learners can together compose relevant text types for their subject using a writing frame and substituting words and phrases teachers have highlighted with those relevant to the text topic. Talking with learners about texts, their purpose, and the language and features of layout will enable them to become more confident at reading and writing text in English.

Each of these support strategies is designed to encourage learner autonomy, whether for expressing vocabulary and ideas, asking questions, or reading and writing texts. Planned support and shared classroom experience help to make listening, speaking, reading, writing and thinking in English achievable for most learners.

- **Visual organisers**

When learning subjects in English, learners use images, video clips, realia and teacher gestures to understand new subject vocabulary and what they have to do with it. 'It is not difficult … to create tasks in which the image has a more prominent role and in which learners are engaged on a more cognitively challenging level' (Goldstein, 2016).

Learners can explore different visual organisers, also known as concept maps, and learn about their purposes. However, teachers should 'develop or co-construct concept maps with students … not merely give them one' (Hattie & Zierer, 2018). See Table 2 for examples of visual organisers often used in school contexts.

Visual organiser	Purpose	Example task
Venn diagram	To show similarities and differences. To compare and contrast concepts.	Art: *Classify characteristics of the paintings of two artists (e.g. Monet and Picasso).*
Cycle diagram	To show events which happen again and again. To order stages in a cycle.	Science: *Why is this diagram a circle shape?* *With a partner, put the steps of the water cycle in the correct order.*
Binary key	To identify subject vocabulary using yes / no questions or other binary questions with one answer.	Biology: *Classify animals using questions – red blood / no red blood, hard body / soft body, shell / no shell.*
Mind map	To explore ideas about a concept.	Physical Education: *Brainstorm the important elements of a warm up for different sports.*
Cause-effect diagram	To show how one step leads to another.	History: *From agrarian to industrial farming. This diagram helps you to understand which factors played a role. Place the developments and events in the diagram to explain their relationship.*
Carroll diagram	To show two sets of opposite criteria.	Maths: *Prime / not prime and even / not even. Sort numbers from 1–50 into the four boxes.*
Storyboard	To show a sequence of events using a series of drawings - often used with speech / thought bubbles or captions.	History: *You read a text about life in Ancient Greece. What do you remember? In the storyboard, do five drawings showing what people did. Then, draw speech bubbles with words in them.*

Table 2: Examples of visual organisers that can be used in EML contexts

Visual organisers are found to be 'most effective after initial exposure to a new topic' (ibid.). Additional visual input in classrooms includes bar and pie charts, line graphs, flow charts, diagrams and infographics. These are regularly used in maths, science, PE, history and geography topics for learners to look at and interpret data. Using dynamic images, in paper or digital form, video clips and other types of visual input can activate learners' knowledge of subject content as well as develop their visual literacy. 'Visual literacy is an essential element of contemporary literacy' (Bearne, 2015).

Tasks with visual input are meaningful 'language events' when learners can speak with and listen to others. They are 'pivotal to … the development of vocabulary for speaking, reading and writing … (and) … have not only a content focus but also a language focus' (Bower, 2017). Learners need support in understanding and using language to explain what these visuals show. Teachers should, therefore, talk to learners about visuals to develop their visual literacy as well as their subject literacy.

Using dynamic images, in paper form or digital, video clips and other forms of visual input can activate learners' knowledge of subject content as well as develop their visual literacy.

Evaluating learners

EML contexts should be able to demonstrate their understanding and knowledge of subject concepts in English. An effective way of doing this is through ongoing, everyday formative assessment. This involves teachers observing and noting how well learners are achieving the content and language objectives planned for each subject lesson. In secondary schools, subject specialists and language specialists can observe and note progress in their own areas of expertise. Evaluating also involves learners being active in identifying which outcomes they think they have achieved. Teachers then need to give learners feedback on their progress. With evidence of how much learning is taking place, teachers can plan future subject reflecting on their subject-specific skills and strategies for learning in English.

Although most evaluation involves advanced planning, unplanned opportunities can happen for teachers to note progress. For example, during spontaneous learner talk about what they are doing in class or during class visits related to subject learning outside school.

Although most evaluation involves advanced planning, unplanned opportunities can happen for teachers to note progress. For example, during spontaneous learner talk about what they are doing in class or during class visits related to subject learning outside school.

Evaluating learning, however, encompasses more than finding evidence of subject content and language acquired. Formative assessment focuses on cognitive and social development as well. Some teachers also evaluate learners' attitudes towards learning subjects in English.

These interconnected elements can be evaluated while learners are doing subject-specific tasks such as oral or written work, drama and role-play, digital projects, experiments and investigations. It is also important to ask learners how they think they are progressing and if they are enjoying learning subjects in English. Self or peer assessment is effective for this. 'Teacher-to-student feedback may be important, but learner-to-teacher feedback is just as or even more important' (Hattie & Zierer, 2018).

The frame in Table 3 can be used or adapted to record learner progress and achievement of content and language learning, cognitive processes and social attitudes. Teachers decide which group of learners they will observe during a lesson and which areas to focus on. Once the learner shows evidence of achieving the outcome well, is improving, or needs further support, teachers record the date this is observed. Teachers can add notes to comment on any particular problems or successes.

It is useful to repeat evaluation at least three times during a school year, then the evidence is there to feedback to learners and their parents. The table can be simplified for self or peer assessment and subjects specified.

Name:			
Can:	**Well**	**Improving**	**Needs support**
remember subject-specific vocabulary			
understand a new art / science / maths concept			
apply knowledge of an art / science / maths concept to a task			
evaluate own and a partner's art / science / maths work			
create an art poster / a science questionnaire / a maths puzzle			
respond to art / science / maths questions: closed			
respond to art / science / maths questions: open			
ask questions about art / science / maths: closed			
ask questions about art / science / maths: open			
use a support strategy to talk about an art / science / maths concept			
describe steps in an art / science / maths task			
think critically or creatively during an art / science / maths task			
take turns during a subject-specific task			
help others to complete a subject-specific task			
demonstrate positive attitudes towards learning			

Table 3: A sample frame to record learner progress and achievement

It is also vital that EML teachers take time to self-reflect. Mehisto and Ting designed a tool for this purpose with three headings: My beliefs and understandings (own analysis of EML); What is visible to others (discussing best EML practice with colleagues) and What others hear (comments to support EML teachers improve their own practice). (adapted from Mehisto & Ting, 2017)



Summary

1. Delivering EML lessons is different from delivering ELT lessons or subject lessons in the L1.

2. When planning, teachers should:

    - have clear outcomes for integrated subject content and language learning in each lesson
    - know or find out which particular subject concepts are difficult for learners to understand
    - be aware of a full range of support strategies and secondary materials to
    - help learners communicate their ideas about subject-specific concepts
    - include opportunities for promoting intercultural awareness
    - be ready to provide additional support to those with specific learning needs
    - understand that steps in EML lessons usually take longer than steps in a subject lesson taught in the L1
    - include cross-curricular links to other subject content, e.g. shapes in maths and art.

3. Support strategies are particularly important in EML lessons. There is a wide range of vocabulary, sentence and text support that teachers can use. Visual organisers, digital images and diagrams are also effective for supporting new subject input and learner output.

4. When evaluating learning, teachers should consider how much progress has been made in:

    - understanding and communication of subject-specific content
    - development of critical and creative thinking skills for subject learning in English
    - growth of maturity in social attitudes and behaviour during subject-specific lessons.

5. Subject specialists and language specialists can make use of each others' expertise by planning and evaluating learning together.

6. The success of EML programmes also relies on:

    - effective leadership from head teachers or teachers appointed as 'bilingual coordinators' as in some Dutch, Spanish and Austrian schools. They need to communicate to staff and parents the aims of the EML programme, who
    - is teaching subject content in English, when, how often, and how this will be organised.
    - teachers who have engaged with professional development courses to enable them to deliver an inclusive EML model and who collaborate with colleagues to share knowledge of their subject specialism and how to teach it.
    - parents who are well informed about the EML programme and who are encouraged to attend meetings about plans, progress and any future changes being considered.
    - links to other schools implementing EML programmes and visits from consultants or other EML professionals who can encourage and offer advice to staff.

Research evidence from studies of bilingual education reveals that if EML programmes are implemented well, learners can achieve higher levels of English proficiency than programmes that teach English as a separate subject only. By following the ideas set out in this paper, teachers can feel confident in delivering an EML programme for their school. It has been stated that bilingual classrooms are, 'interactional contexts in their own right and hatching grounds of future bilinguals.' (Leung & Morton, 2016)

Part 1 of English as a Medium of Learning in Schools addresses key approaches and terminology related to teaching and learning subjects through English in primary and secondary schools. In addition, it presents a range of benefits and some challenges that teachers and learners face in EML contexts. Benefits include the development of teacher and learner language; active and interactive subject teaching and learning; effective thinking in both content and language, and subject resources that widen cultural perspectives. Challenges focus on the language demands of subject content, knowledge of subject content and rethinking how to teach subjects in EML.

Part 2 of English as a Medium of Learning in Schools examines effective ways of delivering EML in primary and secondary schools. It explores specific language that teachers need in order to explain subject concepts, to ask questions, and to respond, manage and model language for EML lessons. Planning for EML, providing support strategies for learners and evaluating subject and language learning, are discussed with a range of examples for teachers to use or adapt. Further reading material is also recommended.



Further reading

Books

These books are recommended because they focus on secondary sectors of education.

Secondary

- Mehisto, P., & Ting, Y.L.T. (2017). *CLIL Essentials for Secondary School Teachers*. Cambridge: Cambridge
- University Press.
- Dale, L., & Tanner, R. (2012). *CLIL Activities*. Cambridge: Cambridge University Press.
- Coyle, D. & Meyer, O. (2021) B*eyond CLIL Pluriliteracies Teaching for Deeper Learning*. Cambridge: Cambridge University Press.
- Nikula, T., Dafouz, E., Moore, P. & Smit, U. (eds.) (2016) *Conceptualising Integration in CLIL and Multilingual Education*. Bristol: Multilingual Matters.

EAL (English as an Additional Language) in Britain is equivalent to ELL (English Language Learning) in North America. Both EAL and ELL address the needs of learners who have a range of different home languages and who may be new to the country where they live.

School leaders may be interested in the following books that provide information on designing and implementing successful bilingual programmes.

- Genesee, F., & Hamayan, E. (2016). *CLIL in Context: Practical Guidance for Educators*. Cambridge: Cambridge University Press.
- Mehisto, P., & Genesee, F. (Eds.). (2015). *Building Bilingual Education Systems: Forces, Mechanisms and Counterweights*. Cambridge: Cambridge University Press.

English as a Medium of Learning (EML) in Schools: Part 2 on the Better Learning website provides additional information on planning, delivering, supporting and evaluating effective EML in schools.

Articles

The articles below examine EML approaches and key terms presented in this Paper in more depth. Some include other sectors of education in addition to secondary.

- Cambridge Assessment International Education. (2017). *Bilingual Learners and Bilingual Education*. Available at: https://www.cambridgeinternational.org/Images/271190-bilingual-learners-and-bilingual-education.pdf
- British Council. Content Based Instruction. Available at: https://www.teachingenglish.org.uk/article/content-based-instruction
- Dobson, A., Pérez Murillo, M.D., & Johnstone, R. (2011). Bilingual Education Project (Spain). Evaluation Report Online Supplement. Available at: https://www.britishcouncil.es/sites/default/files/bilingual-education-project-spain-evaluation-report-suplement-en.pdf
- Durán, L. (2018). Understanding young children's everyday biliteracy: "Spontaneous" and "Scientific" influences on learning. *Journal of Early Childhood Literacy*, 18(1): 71–96. Available at: https://journals.sagepub.com/doi/10.1177/1468798417740617

- Eurydice Brief: *Key Data on Teaching Languages at School in Europe*. (2017). European Commission. See pages 17–19 for 'Language support measures for migrant students'. Available at: https://eacea.ec.europa.eu/national-policies/eurydice/content/eurydice-briefkey-data-teaching-languages-school-europe_en
- Pluriliteracy: Glossary of terms. Complied by Council of Europe. Available at: https://www.ecml.at/F7/Glossary/tabid/1496/language/en-GB/Default.aspx
- https://www.teachingenglish.org.uk/news-and-events/webinars/webinars-teachers/clil-secondary-schools
- https://www.onestopenglish.com/clil/lesson-share-how-should-clil-work-in-practice/156531.article
- https://www.ecml.at/ECML-Programme/Programme2024-2027/CLILteachingmaterials/tabid/5862/Default.aspx

Subject-specific websites for primary

These websites provide classroom ideas for teaching subjects commonly taught in primary EML contexts. They can be used in physical or online classrooms. Teachers can use, adapt or supplement the ideas presented in them.

In addition to subject-specific websites, a high-frequency word list and a glossary of terms are listed for reference.

Maths

- https://nrich.maths.org/curriculum/counting-comparing-and-ordering-age-7-11 maths problems for 7–11 year olds
- https://global.oup.com/education/content/dictionaries/free-resources/oxford-primary-illustrated-maths-dictionary-free-resources/?region=uk Oxford Primary Maths Dictionary Resources

Science

- https://www.youtube.com/watch?v=e5tu4a1Fe9A (2019) Cambridge Primary Digital Classroom Science Experiment Stage 1 (plants)
- https://www.youtube.com/watch?v=zOUconVysFY (2019) Cambridge Primary Science Digital Classroom Stage 4 (melting solids)
- https://www.youtube.com/watch?v=zD3hXPKJAtY (2019) Cambridge Primary Science Digital Classroom Stage 6 (conductivity)
- https://global.oup.com/education/content/dictionaries/free-resources/oxford-primary-illustrated-science-dictionary-free-resources/?region=uk Oxford Primary Science Dictionary Resources

High-frequency words

- https://www.highfrequencywords.org/hfw100fp.pdf (first 100)

All primary subjects

- https://www.bbc.co.uk/teach/primary/zd7p47h

Subject-specific websites for secondary (KS3 = 11 – 14, KS4 = 14 – 16)

These websites provide classroom ideas for teaching subjects commonly taught in secondary EML contexts. They can be used in physical or online classrooms. Teachers can use, adapt or supplement the ideas presented in them.

In addition to subject-specific websites, the new general word list, academic word list and a glossary of terms are listed for reference.

Maths

- Teaching Maths through English – a CLIL approach
- https://www.cambridgeenglish.org/Images/168751-teaching-maths-through-english-a-clil-approach.pdf
- https://nrich.maths.org/curriculum-secondary mathematical topics for 11-16 year olds
- https://nrich.maths.org/9088 rich mathematical tasks for post-16 year olds
- https://www.ncetm.org.uk/media/hpihrj3s/national-curriculum-glossary.pdf
- https://thirdspacelearning.com/blog/maths-games-ks3/
- https://www.bbc.co.uk/bitesize/topics/zknwmbk
- https://www.stem.org.uk/resources/collection/2781/cre8ate-maths

Science

- Teaching Science through English – a CLIL approach
- https://www.cambridgeenglish.org/Images/179514-teaching-science-through-english-a-clil-approach.pdf
- http://www.schoolscience.co.uk/home resources for enriching teaching and learning in science from the Association for Science Education
- Cambridge Education Resources for Schools – a series of workbooks offering integrated content and language support for specific subjects. Available at: https://www.cambridge.org/us/education/subject/science/breakthrough-clil
- Breakthrough to CLIL for Biology Age 14+ workbook
- Breakthrough to CLIL for Physics Age 14+ workbook
- Breakthrough to CLIL for Chemistry Age 14+ workbook
- https://www.tes.com/teaching-resource/word-lists-for-use-at-ks3-science-word-format-6141073 (wordlists)
- https://hands-on-science.co.uk/ks3-ks4-stem-challenges/
- https://www.tes.com/teaching-resources/stem/11-14
- https://edu.rsc.org/primary-science?gad_source=1&gbraid=0AAAADpjszeI28L9d1t--v5YmaJlvmlJe&gclid=EAIaIQobChMIuYr1kpiahwMV85JQBh0UKQhpEAMYASAAEgLuj_D_BwE

The Arts

- https://theartteacher.net/category/art-lessons-and-activities/ks3-art-design-activities/
- https://www.bbc.co.uk/teach/class-clips-video/articles/zf99xyc (Art and Design)
- https://www.bbc.co.uk/bitesize/subjects/zmsvr82 (Music)
- https://www.bbc.co.uk/bitesize/subjects/z9xhfg8 (Music)

History

- Teaching History through English – a CLIL approach
- https://www.cambridgeenglish.org/images/168750-teaching-history-through-english-a-clil-approach.pdf
- https://schoolhistory.co.uk/ materials for history teaching for 11-18 year olds

Humanities / Social Sciences

- https://schoolhistory.co.uk/ks3/ (History)
- https://schoolhistory.co.uk (History)

Geography

- Teaching Geography through English – a CLIL approach: https://www.cambridgeenglish.org/Images/179514-teaching-science-through-english-a-clil-approach.pdf
- https://www.nationalgeographic.org/education/ learning and teaching resources for primary to post-secondary
- https://www.bbc.co.uk/bitesize/subjects/zrw76sg
- https://www.educationquizzes.com/ks3/geography/

Word lists

- https://www.newgeneralservicelist.com/ high frequency words for students of English as a second language
- https://www.eapfoundation.com/vocab/academic/awllists/ word families that frequently appear in academic texts with tools for understanding and using academic vocabulary

All secondary subjects

- https://www.bbc.co.uk/teach/secondary/zkqp47h
- Common European Framework of Reference for Languages provides descriptors for six levels of foreign language proficiency standards, which can be useful for formulating language teaching aims. Available at: https://rm.coe.int/cefr-companion-volume-with-new-descriptors-2018/1680787989

Primary and secondary

- Glossary of terms TKT: CLIL Glossary of terms. (including visual organisers and their purposes): https://www.cambridgeenglish.org/Images/22194-tkt-clil-glossary-document.pdf
- https://www.bbc.co.uk/teach/topics/cekpvy5vp79t (Primary)
- https://www.bbc.co.uk/teach/topics/cz926qrnr85t (Secondary)

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Dafoux, E. (2021:143) So after a Week I Became a Teacher of English: Physics Lecturers' Beliefs on the Integration of Content and Language in English-Medium Higher Education. In Read Talbot, E., Gruber, M-T., and Nishida, R. (eds.) In *The Psychological Experience of Integrating Content and Language. Bristol: Multilingual Matters* (pp. 133 – 152)

Foley, Y. & Pratt, L. (2020) In *Beyond CLIL Pluriliteracies Teaching for Deeper Learning* (p.147) Cambridge: Cambridge University Press.

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Author biography

Kay Bentley is a consultant for CLIL and bilingual programmes in predominantly primary education. She has taught pupils and trained teachers in European primary and secondary bilingual schools. For Cambridge English, she authored Primary Curriculum Box, The TKT Course: CLIL Module, CLIL pages for a six-level course, Guess What! and also for Super Minds 2nd edition, publishing soon. She wrote and was an educator on the Cambridge online course, Teaching your Subject in English, and CLIL: Introduction to theory and practice. Her writing includes materials for primary Maths, Natural and Social Science as well as chapters on CLIL assessment and CLIL Scenarios with Young Learners. She regularly delivers webinars on CLIL and bilingual education.

Liz Dale is a senior lecturer, teacher educator and researcher for CLIL and bilingual programmes in secondary education, based in the Netherlands. She has taught English, participated in several European projects on CLIL teacher education, and chairs audits of Dutch bilingual schools. She is the co-author of two handbooks on CLIL for secondary school teachers: CLIL Skills and CLIL Activities. For Cambridge, she has consulted on professional development programmes for CLIL, reviewed CLIL materials for primary schools, and contributed to a CLIL vocabulary framework. Her recent PhD explored the role of English teachers in bilingual schools in the Netherlands.

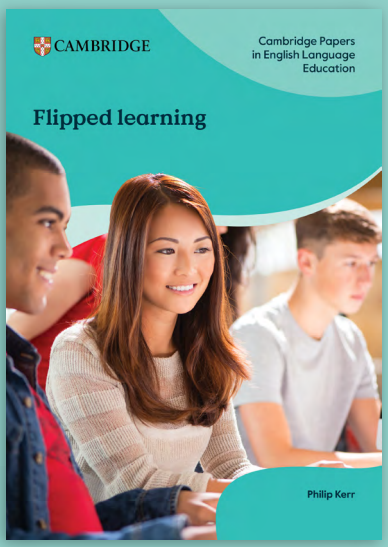


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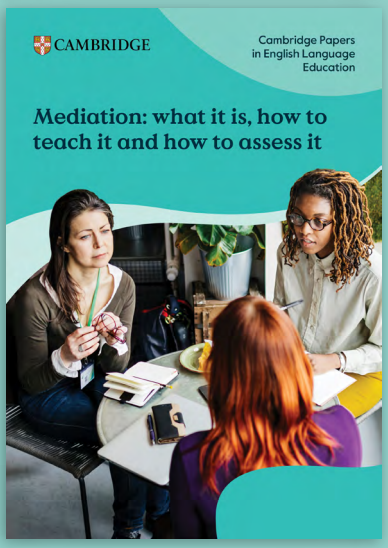
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