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Social-Emotional Learning in English Language Education:  
Mapping the Landscape and Reflecting on the Way Forward

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## **An Emotionally Intelligent, Ecolinguistic Approach to Content and Language Integrated Learning**

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**Abstract:** This article examines the incorporation of concepts derived from ecolinguistics and social-emotional learning (SEL) into the content and language integrated learning (CLIL) methodology when teaching about climate change in the second language classroom. A test of this approach was implemented during a teaching practicum with 14- and 15-year-old students in Catalonia to survey their beliefs, attitudes, and knowledge of the topic before and after experiencing content-based lessons on climate change. Findings suggest that such an approach may be effective, if not essential, for fostering communicative competence, subject matter learning, and social-emotional resilience when presenting challenging existential issues in the classroom.

**Keywords:** content and language integrated learning, ecolinguistics, anthropogenic climate change, ecoliteracy, emotional intelligence, social-emotional learning

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### **1. Introduction**

Anthropogenic climate change (ACC) and the resulting climate crisis have had a globalizing effect on students around the world. Younger generations are increasingly concerned about the future of life on Earth and vigorously demand that world leaders focus on the implementation of solutions to the problem (Gjersoe et al. 2020). This has inspired movements toward centering environmental education, intercultural awareness, and connection with nature in English language teaching

(ELT), often by specifically addressing the issue of climate change in the second language (L2) curriculum (Appleby 2017; Micalay-Hurtado and Poole 2022; Mueller and Pentón Herrera 2023). And while both climate change education (CCE) and social-emotional learning (SEL) have been recognized as effective strategies for developing learners' ecoliteracy, intercultural empathy, and emotional awareness, these critical approaches are not often prioritized in the classroom (Goff 2018; Kwauk and Casey 2021; Ojala 2023).

The need to address ACC in the classroom has, however, led to thoughtful consideration of the mental health repercussions of the climate crisis on today's learners, whether through direct exposure to the effects of ACC, via media consumption, or in the classroom (Bartosch and Fuchs 2024; Sanson et al. 2019). Unsurprisingly, research indicates that ignoring the detrimental social-emotional and psychological effects of extreme weather, forced migration, intergroup conflict and other climate-induced disasters, increases learners' risk of experiencing post-traumatic stress disorder (PTSD), depression, eco-anxiety, and other manifestations of psychological distress (Bountress et al. 2020; O'Donohue et al. 2021; Ma et al. 2022).

While the need for CCE – and environmental education in general – is greater than ever in the ELT classroom, the need to consider the impact of the topic on students' mental health may be an even more urgent concern for our collective future (Bartosch and Fuchs 2024). This article reviews the results of a quantitative survey integrating ecolinguistics into an ELT methodology, considers the efficacy of an emotionally intelligent, ecolinguistic approach to the CLIL methodology, and explores the implications of this approach for fostering language learning, subject knowledge, environmental awareness, and social-emotional well-being. This study may also serve as a reminder of the demands that a comprehensive application of the CLIL methodology may make upon both teachers and students when addressing an existentially urgent topic in the English language classroom.

A couple of important teaching strategies that were considered during the design of the CLIL lessons that formed the basis for this study became impractical to implement due to a limited amount of available class time. The absence of communicative group tasks or presentations and experiential environmental activities – recognized as effective strategies in a CLIL environment as well as for their salutary effect on learners' social-emotional growth – may have been a limiting factor for students' second language and content learning, as well as for their psychosocial development (Dyson et al. 2021; Hernandez Gonzales 2023). The sample population size (N=55) could also be considered a limiting factor bearing on the quantitative results. Repeating the study with a larger pool of participating students over a longer period would allow more time for collaborative and communicative learning experiences, and provide more opportunities to explore the efficacy of this approach. A replication of this study with a larger sample population would also likely result in a deeper, more accurate analysis of the challenging linguistic demands and psychosocial stressors that CCE in ELT places on adolescent students.

## 2. Theoretical framing

The concepts of content and language integrated learning (CLIL), ecolinguistics, and social-emotional learning (SEL) formed the theoretical foundations for this study. Each concept is introduced below, followed by an exploration of the efficacy and implications of employing these concepts as a unified approach to ELT.

### 2.1. Content and language integrated learning

Research has shown that the CLIL methodology enables students to learn academic subject content and increase linguistic competence in a second language by integrating the four Cs of content, communication, cognition, and culture into second language pedagogy (Coyle 2006). When specifically focused on science education, CLIL has been shown to foster the development of scientific literacy within language-focused education (Piacentini et al. 2022) and narrowing the focus to climate-related environmental education in ELT indicates that a CLIL approach can provide learners with both greater awareness of ACC and increased second language competence (Caputo et al. 2010).

The study questioned whether a CLIL-based pedagogical unit focused on ACC might not only foster linguistic competence and subject learning, but also increase students' cultural awareness, develop learners' eco-literacy, and generate enthusiasm for participating in solutions to the climate crisis. Following an application of the CLIL methodology to lessons focused on ACC, the study offered a quantitative analysis and exploration of the student's language and content learning, as well as the students' attitudes, beliefs, and awareness of climate change, while considering the social-emotional impact of the topic on the students. The CLIL methodology, as Chang and Cheng (2022) have shown, effectively presents concepts from an ecolinguistic perspective. Integrating this approach with the principles of SEL, as suggested by Smith (2023), constitutes a comprehensive methodological package that may simultaneously achieve the intertwined goals of communicative competence, proactive ecoliteracy, and social-emotional development.

### 2.2. Ecolinguistics

In 1990, M.A.K. Halliday introduced an innovative ecological approach to language studies which evolved over the subsequent decades into the field of ecolinguistics, a significant new development in linguistic research with profound implications for the L2 classroom and beyond (Halliday 2001). Since its inception, ecolinguistic theory has evolved as an "ecological approach to language [that] takes into consideration the complex network of relations occurring between environment, languages and people speaking these languages" (Wendel 2005, 51) and has been more recently defined as a field that "explores the role of language in

the life-sustaining interactions of humans, other species and the physical environment” (Stanlaw 2020, 1). The protean definition of ecolinguistics highlights the importance of expanding the L2 curriculum to emphasize current and critical issues that impact the life-sustaining capabilities of our shared environment. The concurrent need to enhance communicative proficiency in the classroom aligns with the imperative to develop environmentally responsible, ecoliterate citizens, as individuals are increasingly encouraged to proactively engage with, and participate in solutions to, environmental problems (Novawan et al. 2022).

ACC has understandably emerged as the main topic of environmental discourse in language research. Expanding Halliday’s call for language studies to confront how we think and communicate about environmentally detrimental concepts such as “growthism, speciesism, and classism” (2001, 192), discourse studies in ecolinguistics have encompassed narratives and stories around the topic, representations of environmental issues via news and advertising, and political discourse (Kuha 2018; Penz 2018; Stibbe 2020). Ecolinguistics has thus been recognized as a critical area of research that has assumed a leading role in the efforts to mitigate environmental degradation and ameliorate the effects of climate change (Raygorodetsky 2011).

Fundamental to the effectiveness of ecolinguistics as an approach that can positively impact ELT is the prioritization of practices that address the social-emotional well-being of learners (Barker and McConnell Franklin 2017). As the devastating effects of climate change increase in number and severity across the planet, the role of ELT in addressing both the ecological crisis and its psychosocial implications takes on even greater urgency (Newsome et al. 2023). The number of climate refugees fleeing homelands rendered uninhabitable by climate-related disasters is estimated to reach two hundred million people by 2050 (Clement et al. 2021): this fact alone presents “a new and often traumatic identity dimension” to the ELT classroom as the world experiences an unprecedented demographic shift (Goulah 2020, 9). Given this scenario, it is crucial that ELT professionals embrace approaches in second language pedagogy that facilitate the development of attitudes, beliefs, awareness, and knowledge that will enhance ecoliteracy and promote global ecological well-being while maintaining learners’ psychosocial equilibrium.

### **2.3. Social-emotional learning in English language teaching**

Paramount to the consideration of incorporating CCE within ELT is the need to center SEL and the social-emotional and mental health implications of CCE on learners’ well-being and development (Pentón Herrera and Martínez-Alba 2021). Including SEL strategies is a critical need in ELT even in the most benign classroom scenarios, and a focus on learners’ emotional well-being assumes greater urgency when educators aim to address critical existential issues in their lessons that may significantly impact the lives of their students. In one recent study, secondary

school students participating in climate change lessons expressed up to eighteen different negative feelings including nervousness, fear, insecurity, rage, guilt, and disappointment. Such troubling results must be thoroughly addressed if ELT is going to tackle CCE without creating unnecessary trauma that will negatively impact learners' social-emotional health (Winter et al. 2022).

While the climate crisis has galvanized students around the world to act and demand solutions, it has also generated feelings of “hopelessness, pessimism, and helplessness” (Ojala 2021, 626) that may be exacerbated by an increased focus in the classroom on these critical global issues (Hicks and Bord 2001). Therefore, it is vital that CCE strategies in ELT focus on equipping learners with the coping mechanisms, self-care strategies, and emotional intelligence required to maintain their social-emotional stability as they achieve L2 competence and acquire academic knowledge (Roderick 2023).

Several strategies and activities have been effective for promoting both SEL and L2 acquisition in the ELT classroom, among them “bibliotherapy, mindfulness, peace education, and restorative practices” (Pentón Herrera 2020, 7). The CLIL methodology has likewise been identified as an approach to ELT that is highly compatible with SEL goals by fostering social-emotional skill acquisition while facilitating L2 and academic achievement (Coyle et al. 2010; Mortimore 2017). It has also been shown that academically and existentially challenging topics can be delivered more effectively by maintaining cognizance of learners' social-emotional needs through the dialogic practices, active learning, and scaffolding processes intrinsic to CLIL (Coyle 2008; Puente et al. 2023). Another hallmark of a successful CLIL approach is the provision of a secure, caring, supportive, and participatory classroom, also among the key requirements for effective SEL. Integrating students' social and emotional growth into ELT thus appears to be a natural, relevant, and logical progression within the CLIL classroom environment (Mortimore 2023).

### **3. Methods**

The research conducted for this study sought to explore the potential impact of incorporating an ecolinguistic approach to CLIL in the ELT classroom, and the consideration of the social-emotional repercussions of grappling with an existentially challenging topic such as ACC, on learners' willingness, interest, and ability to engage with the materials, and how these factors may have impacted learning outcomes. The investigation focused on the effects of integrating an ecolinguistic approach to CCE into ELT, analyzed its efficacy for fostering language learning, subject knowledge, and environmental awareness, and considered its impact on the social-emotional well-being of learners via the framework discussed in the following sections.

### **3.1. Research questions**

Do CLIL lessons on the causes and effects of, and solutions to climate change foster language learning, subject knowledge, and environmental awareness?

Do students participating in CLIL lessons on the causes and effects of, and solutions to global climate change perceive any benefits or challenges from the lessons to their second language learning efforts?

Does the topic of ACC have a detrimental impact on second language learners' social-emotional well-being and ability to engage with the lessons and materials?

### **3.2. Participants**

The study had a sample population of fifty-five first language (L1) Catalan speakers with second language (L2) English ranging in the B1-B2 CEFR level, age 14–15 years, who participated in a series of lessons on the topic of climate change causes, effects, and solutions. All participants volunteered for the study, and personal data was treated with all required privacy measures. Parental or guardian foreknowledge and permission were obtained when required via signed Informed Consent Forms.

### **3.3. Materials**

Teaching materials were primarily developed by the instructor for the purposes of this study and supplemented with available online resources based on the concepts of the CLIL methodology. Classroom tasks, lessons, and activities designed to familiarize students with the causes, effects, and solutions regarding climate change were delivered to the students in English via standard classroom technology, including laptop and desktop computers, projectors, printed matter, and chalkboard. Formats included MS PowerPoint, MS Forms, Adobe PDF, online video, and computer-generated, interactive worksheets.

### **3.4. Procedure**

Pre- and post-lesson questionnaires consisting of modified versions of the Climate Change Attitude Survey (CCAS) (Christensen and Knezek 2015), a self-reporting tool designed to measure North American middle-school students' beliefs, attitudes, and knowledge regarding climate change, were completed using digital forms on students' classroom laptops or mobile devices before and after the CLIL lessons. Classroom observations and interactions provided opportunities to further explore learners' experiences, perceptions, and challenges related to integrating ecolinguistics via the CLIL methodology into their current L2 learning practices.

To complete the modified CCAS, students rated the questionnaire statements on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The statements to be rated were presented in three sections intended to capture either a belief about, an attitude toward, or knowledge of climate change issues. The post-questionnaire included three additional statements to further assess the efficacy and challenges of an ecolinguistic approach to the CLIL lessons.

The data compiled in the questionnaires was coded in Excel, and quantitative analyses via paired samples t tests using the JASP platform were conducted to compare pre-lesson and post-lesson beliefs, attitudes, and knowledge. Data collected solely in the post-questionnaire related to student perceptions of the effectiveness and the challenges of the lessons for developing their L2 competency were also coded and analyzed via chi-square goodness of fit tests.

## 4. Results

### 4.1. Paired sample t-test results

**Student beliefs about climate change:** The results comparing Section 1 of the pre-questionnaire (M=33, SD=3.3) and the post-questionnaire (M=31, SD=7) indicated that the students' beliefs regarding ACC did not change after the CLIL lessons and the difference between tests was not significant:  $t(54)=0.963$ ,  $p=0.340$ .

**Student attitudes toward climate change:** The results comparing Section 2 of the pre-questionnaire (M=26, SD=3) and the post-questionnaire (M=25, SD=4) indicated that the students' attitudes toward ACC did not change after the lessons and the difference between tests was not significant:  $t(54)=0.25$ ,  $p=0.81$ .

**Student knowledge of subject matter and language:** The results from Section 3 of the pre-questionnaire (M=19, SD=4) and the post-questionnaire (M=19, SD=4) indicated that the students' subject matter and language knowledge did not change after the lessons and the difference between tests was not significant:  $t(54)=0.096$ ,  $p=0.92$ .

**Chi-square goodness of fit tests:** The chi-square goodness of fit test was used to determine whether the participants' responses to the three statements after the lessons could be expected in the cohort of second language learners under similar conditions. The results revealed: a frequency of responses where the majority of the participants strongly agreed with the statement that "the English lessons about climate change helped me to learn new English vocabulary and expressions":  $\chi^2(4, N=55)=35.091$ ,  $p<.001$ ; a frequency of responses where the majority of the participants strongly agreed with the statement "I learned a lot about the causes, effects, and solutions to Climate Change in the English lessons.":  $\chi^2(4, N=55)=50.0$ ,  $p<.001$ . In sum, students participating in the content and language integrated



lessons perceived that the lessons were beneficial for communicating in English about climate change and for learning about the topic.

The analysis of responses to the statement “The English lessons about Climate Change were challenging for me” indicated that students participating in content learning integrated language lessons did not perceive that the lessons were challenging for their second language learning; the p-value derived from the chi square test of this statement is above the level of significance;  $\chi^2(4, N=55)=8.727$ ,  $p < 0.068$ .

## 5. Discussion

The intent of this study was to examine the efficacy of the CLIL methodology as an SEL strategy when presenting English lessons pertaining to a critical environmental issue. The pre-questionnaire results revealed that most of the students came to the lessons with many positive preconceived notions regarding climate change and felt confident in their ability to communicate about the topic in English. Among the concepts evaluated, the students expressed agreement with the following salient points prior to the teaching unit: climate change is real and happening now; human activity is the cause of climate change, but humans can also solve climate change; the students would like to participate in solutions to climate change. The post-questionnaire results revealed no statistically significant changes in these perceptions, but outlying responses indicated that for some students, belief in the possibility of humanity arriving at solutions to climate change and the perception of their own agency to participate in solutions declined after receiving English lessons about the topic. Even more startling was evidence indicating that for some students, the ability to communicate about climate change in English declined rather than improved during the lessons. The social-emotional impact of the lesson’s topic may have been a key factor in these unexpected findings.

These anomalous results may be seen as an indication of how the subject of ACC is an important topic for L2 and content learning that may generate feelings of concern, anxiety, and fear about the future, with profound implications for learners’ social-emotional stability and their capacity or willingness to engage with the lessons (Hickman et al. 2021). While the lessons included information about viable solutions to the climate crisis designed to help students process the information and inspire a sense of confidence and possibility for the future, a stronger and more direct focus on SEL in the classes may have been more effective for mitigating the negative psychological impact of learning about the traumatic effects of ACC. The lack of a direct focus on SEL that could counter eco-anxiety and negative emotions among students grappling with the topics of extreme weather, food and water shortages, and other effects of ACC was implicated in the findings and speaks to the need for a comprehensive approach to CLIL that centers SEL as a key strategy and

addresses the full impact of how challenging subject matter may impact learners' social-emotional well-being (Burke et al. 2018).

Another factor with potential bearing on learners' psychological well-being and engagement with the lessons was the need to differentiate between the viability of personal behavior versus institutional behavior on the environment (Jacquet 2017). While environmental messaging often focuses on personal behaviors – recycle more, drive less, conserve water – as a means for solving environmental problems, many environmental activists are quick to point out that as important as such personal behaviors may be, action at the governmental, institutional, and industrial levels has a much greater capacity for large scale reduction of greenhouse gas (GHG) emissions (Hormio 2023). As a matter of environmental justice, the most egregious GHG emitters who hope to continue reaping enormous profits from their environmentally destructive behavior should also be the primary focus of solutions to the crisis. This imbalance in responsibility is even starker when considering the impact of adolescent students' personal behavior on climate, given their limited power for major decision-making in energy consumption, waste generation, and other areas of concern at the personal level (Skeiryte et al. 2022). While young people today, like all of us, should do their part to live more sustainably and contribute to solutions to the climate crisis (and a majority of the students in this study agreed with that notion), they are the generation inheriting a world endangered by the behaviors and choices of their elders and should not be expected to now bear the burden of responsibility for solving a global crisis, a burden not of their making, replete with detrimental repercussions for their physical and mental health (Yacek 2022).

Rather than implicate students as part of the problem of ACC, it is critical to center SEL strategies within ELT that can provide them with the tools and knowledge to empower them to use their voices and demand change from adults in positions of authority that will have the greatest impact on their future lives. ELT has the power to provide them with the communicative skills to do so effectively while also maintaining their psychosocial stability, and ELT practitioners must prioritize SEL to achieve these positive outcomes (Lau and Shea 2022). Referring again to the Four Cs, the CLIL practitioner must be cognizant of the messages in the content, the communicative functions required to process them, the cognitive impact of a topic on learners, and the social-emotional implications of lessons addressing critical real-world issues. When presenting materials and topics with potentially harmful repercussions for learners' social-emotional stability and well-being, it is incumbent upon educators to prioritize the protection of mental health during adolescence, a period of inner turmoil, transition, and neuroplasticity (Immordino-Yang et al. 2019).

In the case of this study, even a minority of students coming away from lessons on climate change feeling less confident about humanity finding solutions to the crisis, or their own ability to communicate about the issues in English, indicated

that something more was needed beyond the usual focus on the dual CLIL goals of content and language learning. An expanded definition of the methodology was called for, one that would center SEL and the psychological well-being of learners as key components for success, no less important than the development of L2 competence and academic subject mastery.

## 6. Suggestions for an emotionally intelligent, ecolinguistic approach to CLIL

The efficacy of integrating an ecolinguistic perspective with the CLIL methodology in second language pedagogy would be demonstrated by building on the simultaneous goals of improved L2 competence and greater subject content knowledge by including the development of learners' ecoliteracy and proactive attitudes toward participation in solutions to environmental problems. Infusing this approach with strategies designed to protect and develop learners' social-emotional health and well-being would further strengthen the methodology's ability to facilitate achievement in L2 and subject learning. Delving into this approach, one may discover the existing complementary strategies that link SEL and CLIL and reveal a potential formula for meeting ELT and academic learning goals while maintaining learners' psychological stability.

Existing frameworks that facilitate the development of SEL often align with common CLIL practices, echoing if not replicating the Four Cs CLIL framework by centering creativity, critical thinking, communication, and collaboration as a symbiotic theoretical framework for SEL, and expanding this structure to include *community* as a requisite factor to inspire the inclusion of impactful current events with SEL implications in ELT (Coyle et al. 2010; Burbules et al. 2020). Connecting these frameworks via an emotionally intelligent, ecolinguistic approach to CLIL incorporates a variety of strategies with mutual benefit for L2 and academic learning that simultaneously foster SEL (Durlak et al. 2011; CASEL 2018).

Essential SEL skills and social interaction can be practiced through the group work and cooperative learning structures commonly associated with CLIL, integrating content learning with SEL objectives that promote self-management, communication, and teamwork. The CLIL classroom can provide opportunities for reflection that enable students to evaluate their own progress and learning experiences as they develop self-awareness and empathy along with their L2 and academic skills, and lessons can incorporate specific SEL-related content that center emotions, empathy, and responsible decision-making – a key skill for fostering positive environmental behaviors – as pertinent topics of L2 learning. Also, through the judicious use of technology tools like digital platforms for collaboration and multimedia projects for self-expression, the integration of SEL concepts into CLIL activities can foster communicative competence and intercultural empathy (Lindoso 2023). And most importantly, the CLIL practitioner can

foster SEL by establishing a supportive, inclusive classroom environment where students feel safe and respected and are empowered to use their authentic voices, participate actively in the creation and implementation of communicative projects and activities, and make decisions about the trajectory of their learning efforts. In this way, an emotionally intelligent approach to CLIL may build autonomy, empower ownership of one's learning experience, and enhance social-emotional development, while adhering to the communicative and content learning goals of the methodology.

## 7. Conclusion

While the statistics revealed in this study did not support the supposition that an environmentally focused CLIL teaching unit will guarantee positive changes in learners' beliefs, attitudes, and knowledge around an environmental topic, evidence was presented that indicated that an ecolinguistic approach to CLIL can engage and motivate language learners and impart concepts and lexis that can enable them to successfully communicate about the topic. While CLIL has been touted as a highly adaptable methodology dual-focused on academic content and second language learning, the expanded concept proposed here may be seen as a quartet of intersecting foci: improved L2 competence, academic content learning, increased ecoliteracy, and the development of social-emotional well-being.

Whether we call it *eco-CLIL*, *Green ELT* or an *Emotionally Intelligent, Ecolinguistic Approach to CLIL*, the implementation of this approach should deliver a comprehensive methodological package that can: provide learners with the language skills to express their ideas, engage in debate, and advocate for sustainable practices in their schools and communities; teach appropriate academic content on a subject of critical importance; foster emotional intelligence, interpersonal, and sociocultural empathy; and equip learners with the critical life tools of self-care and emotional management. Educators in the ELT classroom must rise to the occasion and dedicate themselves to methods and approaches that ensure not only the best L2 and academic outcomes but also the protection and development of their students' psychological health, resilience, and empathy in the face of a daunting global crisis.

The lessons at the heart of this study sought to empower students with the subject knowledge and language skills required to proactively focus on solutions to the climate crisis, and to develop learners as scientifically and environmentally literate global citizens. Centering social-emotional learning in the methodology emerged as a key component of this approach to ensure that all students maintained the psychosocial equilibrium necessary to successfully engage with a challenging, existentially alarming topic. As M.A.K. Halliday stated, "Language does not passively reflect reality; language actively creates reality" (2001, 179); this study suggests that we can reaffirm this observation with effective, engaging, second

language pedagogy that accurately and honestly reflects our current reality and strives to center social-emotional learning in the ELT classroom that can empower our students to participate in the creation of a just and viable future reality.

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