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Conceptualizing CLIL for Chinese Higher Education: An Interdisciplinary English Teaching Approach

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Abstract

Content and Language Integrated Learning (CLIL) has gained global prominence as a dual-focused pedagogical approach that teaches subject content through an additional language. However, in Chinese higher education, CLIL remains relatively nascent and conceptually underdeveloped despite growing interest. This study addresses this gap by proposing a CLIL approach tailored to Chinese universities, emphasizing interdisciplinary integration of subject content and English language learning. Drawing on a comprehensive review of CLIL literature and Chinese educational practices, this study develops a conceptual framework for implementing CLIL in tertiary English education. The proposed framework outlines key components for effective integration: dual-focused learning objectives (disciplinary knowledge and language proficiency), collaboration between language and content instructors, and pedagogical strategies for content-rich language use. This interdisciplinary model demonstrates how aligning English teaching with diverse academic content can simultaneously enhance students' language skills and subject understanding. The study concludes that this context-sensitive CLIL framework can enrich curriculum design and teaching practices in Chinese higher education. It offers practical implications for educators and policymakers, suggesting that integrating content and language instruction can improve learning outcomes and better prepare students for an interdisciplinary, global academic environment.

Keywords

CLIL, interdisciplinary integration, Chinese higher education, English language learning, curriculum design, conceptual framework

1. Introduction

In the era of globalization, China's higher education system faces rising expectations to cultivate *versatile* talents with both subject-matter expertise and strong English language skills (Zhang et al., 2024). The demand for graduates proficient in multiple fields and able to communicate across cultures has grown urgent in recent years. In response, Chinese educators have shown increasing interest in Content and Language Integrated Learning (CLIL) as a promising pedagogical approach for simultaneous content and language education (Hu et al., 2023). CLIL is broadly defined as "an educational approach in which an additional language is used for the learning and teaching of both content and language". Unlike traditional English-as-a-foreign-language classes, CLIL embeds language learning within *academic or disciplinary content*, thereby pursuing dual objectives: mastery of subject content and development of language proficiency (Hu et al., 2023). This dual focus aligns with holistic educational principles, linking language learning to real-world knowledge and other disciplines (Hu et al., 2023). For Chinese higher education, CLIL offers a pathway to interdisciplinary English teaching, where English instruction transcends isolated language drills to encompass topics from science, engineering, humanities, and beyond, reflecting the integrated knowledge economy of the 21st century (Zheng, 2023).

Globally, CLIL has evolved from a European innovation into an "irresistible educational tide" adopted in diverse sociocultural contexts. It has demonstrated benefits such as improved subject learning, language gains, cognitive development, and intercultural competence. Studies indicate that CLIL can foster higher-order thinking and problem-solving skills by engaging students with subject content in a foreign language. Moreover, its holistic nature encourages connections across disciplines and to students' daily lives, which is inherently interdisciplinary. These advantages have drawn attention in China, a country eager to enhance the quality of college English education and produce graduates who can operate bilingually on the global stage (Li, 2021).

Despite its promise, CLIL in Chinese higher education is still in a formative stage. CLIL is "not new in China" – early forms can be traced back to English immersion programs in elite schools in the 2000s – but only in the last decade has there been an upsurge of research and pilot implementations. Chinese scholars have begun conceptualizing what CLIL could mean locally. For example, Chang and Zhao (2021) propose that CLIL in China should aim for *yuren* (students' holistic development in knowledge, capabilities, qualities), achieved through *kecheng* (curriculum design aligning with those development goals), *jiaocai* (authentic content materials), *jiaoxue* (teaching that integrates content and language objectives), and *jiaoshi* (teacher professional development). This vision suggests a comprehensive approach adapted to China's context. Nonetheless, CLIL remains somewhat "obscure" in the Chinese academic community, and stakeholders lack a clear picture of how to implement and sustain it. Many college English programs still rely on traditional models that separate language instruction from disciplinary content, missing the opportunity for interdisciplinary integration.

The need for a structured CLIL framework is further underscored by challenges observed in current

practices. Research reveals variability and confusion in what is labeled as "CLIL" in Chinese universities. Often, content-enriched English lessons (a form of content-based instruction) are called CLIL, but they may not fully align with CLIL principle—for instance, if they remain language-centric and do not contribute to students' formal content curriculum. Meanwhile, English Medium Instruction (EMI)—teaching academic courses entirely in English—has expanded in China as part of internationalization efforts, but EMI programs often neglect language support, leaving many students struggling to achieve the dual goals of content learning and language acquisition (Yuan et al., 2024). A recent study found that Chinese undergraduates in EMI courses "did not seem to be sufficiently prepared to achieve the dual goal" of mastering subject matter and improving English, and that weaker English speakers risk falling behind, exacerbating educational inequalities. This finding highlights the importance of a CLIL approach, which explicitly scaffolds language learning within content instruction, as a way to better prepare and support students in bilingual education settings (Yuan et al., 2024). In essence, while Chinese higher education recognizes the value of integrating English with disciplinary learning, it faces a conceptual and practical gap in how to do so effectively and equitably.

Purpose and Scope: In light of these developments, this paper aims to propose a conceptual framework for implementing CLIL in Chinese higher education, centered on an interdisciplinary English teaching approach. By drawing on recent scholarship (2021-2025) and theoretical models, we seek to outline how English language instruction can be systematically integrated with content from various disciplines in Chinese university classrooms. This is a conceptual, literature-based study rather than an empirical field investigation. It synthesizes diverse sources to offer a coherent vision that addresses local pedagogical needs and aligns with global CLIL practices. The framework will encompass key elements such as curriculum design, instructional strategies, teacher preparation, and assessment—all tailored to Chinese higher education contexts where English is learned alongside academic content.

Significance: Developing such a framework has both theoretical and practical significance. Theoretically, it contributes to defining CLIL in a non-Western context, enriching the global discourse on bilingual and interdisciplinary education. Practically, it provides Chinese educators and policymakers with a structured model to guide curriculum reform and teacher training for CLIL. Given China's scale and the strategic importance of English proficiency for its graduates, a successful CLIL implementation could have far-reaching impact on educational outcomes, student engagement, and international competitiveness (Li, 2021). Furthermore, an interdisciplinary CLIL approach aligns with national directives to improve English teaching quality and incorporate Chinese culture and other localized content into language education, thus fostering students' global vision *and* cultural confidence.

In the following sections, we first review current literature on CLIL and related approaches in Chinese higher education, identifying insights and gaps (Literature Review). Next, we outline the theoretical foundations underpinning CLIL and interdisciplinary pedagogy (Theoretical Framework). We then propose and discuss the components of the conceptual framework for CLIL in China (Discussion).

Finally, we conclude with a summary of key points and recommendations for future practice and research (Conclusion).

2. Literature Review

2.1 CLIL: Concept and Global Perspectives

Content and Language Integrated Learning (CLIL) emerged in Europe in the 1990s as a form of bilingual education, and it has since become "one of the most attention-catching pedagogical approaches" internationally (Hu, 2021). The core idea of CLIL is to simultaneously impart *content knowledge* (e.g., science, history, engineering) and *foreign language skills* within the same course or curriculum (Hu et al., 2023). Numerous studies across contexts have documented CLIL's potential benefits. Learners in CLIL programs often show improved second language proficiency without sacrificing subject learning outcomes. In fact, by engaging with authentic disciplinary content, students may develop *deeper cognitive skills* (such as analysis and critical thinking) and greater motivation for learning the language. CLIL's dual focus encourages active learning and helps students make meaningful connections between language and knowledge, which can increase content retention and language use confidence (Hu et al., 2023).

Beyond linguistic gains, CLIL is associated with positive affective and intercultural outcomes. Because CLIL classrooms use a foreign language to explore diverse topics, students frequently broaden their cultural horizons and gain intercultural communicative competence (Zheng, 2023). CLIL has been credited with fostering openness and empathy as students compare "self" and "other" cultural perspectives within course content. For example, a CLIL lesson on environmental science taught in English in Asia might include case studies from Western and Chinese contexts, prompting students to navigate multiple cultural framings of the issue. Such experiences align with the goals of global citizenship education and have been linked to Sustainable Development Goal 4 (quality education), which emphasizes intercultural understanding and lifelong learning skills.

However, global CLIL implementation is not monolithic – it varies widely by context. Coyle's (2007, 2010) influential 4Cs framework (Content, Communication, Cognition, Culture) underlines that effective CLIL requires a balanced integration of these dimensions. In practice, this means CLIL programs must be carefully designed so that subject content ("Content") and language ("Communication") objectives are given equal priority, supported by cognitive development ("Cognition") through tasks that challenge thinking, and enriched by cultural/contextual relevance ("Culture"). European countries have tended to implement "hard" CLIL models – content-led instruction often taught by subject specialists in the target language – especially at secondary levels in subjects like science or geography. In contrast, some contexts (including parts of Asia) use "soft" CLIL, which may be more language-driven and limited in scope (e.g. a module within a language class on a specific topic). Both models aim for content-language integration, but they differ in intensity and instructors' profiles. As Ball et al. (2015) note, *hard CLIL* typically involves teaching a content course

largely in L2 (foreign language) by a content expert, whereas *soft CLIL* involves language teachers incorporating thematic content into language lessons. Each approach has implications for teacher training and curriculum planning.

Despite early enthusiasm—sometimes termed the "CLIL craze"—researchers have also raised critiques and questions, leading to what Pérez-Cañado (2020) calls a phase of "CLIL conundrum and controversy" (Hu, 2021). Some studies found that CLIL's benefits were overstated or depended on specific conditions (such as high student language proficiency or strong teacher support). Challenges reported globally include: a shortage of teachers who are fully competent in both the subject and the language; a lack of suitable teaching materials; difficulty in assessing both content and language learning; and occasional trade-offs where language accuracy might suffer at the expense of content fluency or vice versa. For instance, if CLIL instructors focus heavily on content, students may not receive enough scaffolding in the target language, whereas if they simplify content too much for language reasons, the academic rigor may decline. Thus, the literature underscores that *quality* CLIL implementation requires careful balancing and support structures – it is "not a universal model" but must be adapted to local variables like student language level, curricular goals, and available resources.

2.2 CLIL in Chinese Higher Education: Current Status and Research

In China, the adaptation of CLIL is intertwined with broader educational reforms targeting college English and bilingual instruction. Since the early 2000s, the Chinese Ministry of Education has promoted English-taught content courses (often under the banner of *bilingual education* or EMI) to enhance students' English abilities and subject knowledge. A recent analysis of 24 Chinese university syllabi found that many institutions incorporate CLIL-type elements in their College English curriculum as a way to "achieve the national goal of improving higher education quality" and to meet the demands of globalization. In practical terms, universities have introduced specialized English courses like *English for Academic Purposes (EAP)*, *English for Specific Purposes (ESP)* in fields such as business or science, and courses on *Chinese culture taught in English*, all of which reflect a content-language integrated approach. Top-tier universities tend to emphasize academic and cross-cultural content in English classes, whereas mid- and lower-tier institutions more often focus on general English or vocational content, reflecting differences in student language proficiency and institutional priorities.

Despite this progress, the implementation of CLIL in China is uneven and faces several challenges. A systematic review of CLIL research in China (2013–2022) by Hu et al. (2023) notes a "paucity of knowledge" on CLIL's development and application in China and aims to map what has been done. The review found that a majority of Chinese CLIL studies were conducted in higher education contexts, with English being the predominant medium. This indicates that Chinese universities are indeed the focal point of CLIL experimentation, aligning with policy pushes at the tertiary level. Moreover, these studies covered a variety of subject areas being integrated with English, demonstrating that diverse content—from sciences and engineering to humanities—has been tried in CLIL formats. Such diversity

"denotes the coordination of 'self' and 'other' intercultural identities", meaning courses often blend international content with Chinese context (for example, a course might use English to teach about both Western and Chinese cultural topics, achieving intercultural scope).

Crucially, Chinese CLIL research so far has gravitated towards certain foci while neglecting others. Hu et al. (2023) report that affective evidence (e.g., student and teacher perceptions, attitudes, motivation) and *performance evidence* (especially language learning outcomes) "tended to be the research nuclei" of most studies. In other words, many researchers have examined how students and teachers feel about CLIL courses and whether students' English improved, often finding broadly positive results on both fronts. For example, students frequently perceive CLIL classes as more engaging or useful than traditional English classes, and modest gains in vocabulary, speaking or academic reading skills have been documented. However, other important dimensions—such as assessment methods, the role of students' first language (translanguaging), addressing mixed proficiency levels, materials development, and detailed classroom processes—have been relatively de-emphasized in the Chinese literature. This suggests that the field has not yet fully examined or theorized how to handle some of the *practical complexities* of CLIL in the local context.

Another theme in the literature is the tension between English-medium instruction (EMI) and CLIL in China. While both involve teaching content in English, their pedagogical orientations differ. EMI often implies teaching the subject *as is* in English, assuming students will *pick up* the language along the way, whereas CLIL deliberately integrates language instruction into the content teaching. Chinese policymakers and educators recognize that simply mandating EMI is not a panacea; without language support, EMI can lead to superficial learning or student frustration. Yuan, Fang, and Hu (2024) found that Chinese university students in EMI programs felt underprepared in terms of academic English skills and that the gap between high- and low-proficiency students widened in EMI classes. Such findings have significant pedagogical implications: they "suggest that future studies need to explore strategies to better prepare and support students to benefit from EMI programmes", essentially pointing towards CLIL-type solutions. Indeed, there is a growing discourse in Chinese higher education about moving from "EMI for content delivery" to "CLIL-ized EMI" that gives equal weight to language learning (Hu, 2023). This shift could mitigate inequalities by providing all students with the linguistic tools to access content.

Teacher capacity is another critical issue identified. Implementing CLIL places high demands on instructors, who must possess or develop a blend of language proficiency, subject knowledge, and integrative pedagogical skills (Zhang et al., 2024). A 2024 study by Zhang et al. investigated college English teachers' abilities in CLIL-based classrooms, especially in less-developed regions of China (Zhang et al., 2024). The study concluded that seven key dimensions of teacher ability are required: (1) language teaching ability, (2) content teaching ability, (3) ability to integrate language and content instruction, (4) ability to cultivate students' cognitive skills, (5) ability to select and use appropriate teaching resources, (6) classroom management ability, and (7) evaluation and reflective ability. These

findings echo the multifaceted role of a CLIL teacher, who must be at once a language instructor and a content facilitator. Notably, the surveyed teachers and students in Zhang et al.'s study confirmed that such skills are presently uneven—teachers in under-resourced areas especially may lack confidence or training in content knowledge, or conversely, content experts might lack pedagogical English skills. Consistently, other research points to a "dearth of qualified teachers" as one of the biggest obstacles to expanding CLIL courses in China Without deliberate teacher professional development and possibly interdisciplinary team-teaching models, scaling up CLIL could be difficult. Thus, any conceptual framework must account for teacher training and support mechanisms.

Some literature also examines *student preparedness* and outcomes in Chinese CLIL settings. Studies generally report that students with higher English proficiency thrive in CLIL classes and appreciate the challenge, whereas those with lower proficiency may struggle if not adequately supported. There is a concern that CLIL, if only offered to elite students or in top universities, could create a two-track system, benefiting already advantaged learners most. However, small-scale experiments have shown that with proper scaffolding, even students of modest English ability can engage with content topics in English and improve over time. For example, an empirical case study using an interdisciplinary approach in a business English course (targeting English majors) found positive outcomes in content knowledge and language skills for participants, demonstrating that integrating topics like business case studies in English can enrich language classes for Chinese students (Xie, 2024). Similarly, Huang (2023) reports that English majors studying Chinese culture in English (a soft CLIL approach) became more confident in discussing academic content in English and overcame some "cultural aphasia" (the inability to express one's own culture in a foreign language). These findings underscore CLIL's potential for deepening students' learning experiences—but also the need to carefully align content difficulty with language ability, a recurring theme in CLIL pedagogy.

2.3 Interdisciplinary English Teaching and CLIL

The phrase "interdisciplinary English teaching" in the context of CLIL refers to designing English language learning experiences that draw knowledge from multiple academic disciplines or content areas. This goes beyond a single-subject bilingual course to a broader philosophy of weaving language learning with varied content streams. In Chinese higher education, this concept resonates with calls for innovation and *comprehensive quality education*. For instance, the Teaching Guide for Undergraduate Foreign Language Majors in China (2020) explicitly urges English programs to "value humanities and social sciences" and integrate more Chinese and local cultural content, alongside improving students' language and intercultural skills. The aim is to break the silo of English teaching as just language form practice, instead using English as a medium to explore literature, history, science, and other knowledge domains—thereby producing graduates who are both linguistically proficient and well-rounded intellectually.

Content-based instruction (CBI) and English for Specific Purposes (ESP) are earlier approaches closely related to this idea. They have long advocated using subject matter as the vehicle for language teaching

in universities (e.g. English for medical students, business English, etc.). CLIL can be seen as an evolution of these approaches with more explicit dual aims. One important distinction highlighted in the literature is that true CLIL involves meeting *both* content and language learning outcomes, whereas not all content-based English classes do so. For example, a traditional ESP course might teach business concepts in English primarily to teach business terminology and communication (language goals), without assessing whether students actually master business concepts (content goals). An interdisciplinary CLIL approach in contrast would ensure that students are evaluated on content comprehension *and* on language use, treating both as integral.

Finally, interdisciplinary English teaching through CLIL is seen as a way to promote innovative talents. The Chinese government has increasingly promoted innovation and critical thinking in higher education; CLIL's incorporation of *cognition* (one of the 4Cs) inherently supports this by pushing students to process subject matter in a new language, an exercise in mental flexibility and creativity. Some pilot studies in China have linked CLIL to improvements in students' critical thinking and research skills. For instance, integrating a small research project on a scientific topic into an English course (with appropriate scaffolding) can train students in both scientific inquiry and technical English vocabulary, yielding dual competencies. Interdisciplinary CLIL courses, by exposing students to content from different knowledge areas (e.g., a course that touches on economics, history, and environmental science topics all in English), might also encourage students to make connections across fields and see issues from multiple perspectives. This broad-based skillset is exactly what many Chinese universities now list among their educational objectives: cultivating globally competitive students who are not only linguistically capable but also able to "adapt better to globalization" through flexible, wide-ranging knowledge.

Summary of Gaps: The literature review indicates that while the potential of CLIL for interdisciplinary English teaching in China is well recognized, several gaps remain. Conceptually, there is a need for clearer frameworks tailored to China's context—defining what effective CLIL looks like in Chinese higher education beyond borrowing models from Europe. Empirically, more research is needed on underexplored areas such as assessment methods, optimal uses of L1 (Chinese) in CLIL classrooms, and content selection strategies for varying proficiency levels. Practically, challenges like teacher training, materials development, and institutional support structures need to be addressed to move from small-scale experiments to sustainable programs. The remainder of this paper seeks to address the conceptual gap by proposing a structured framework that synthesizes theoretical principles and practical considerations for implementing CLIL in Chinese higher education, with an emphasis on interdisciplinarity and pedagogical relevance.

2.4 Theoretical Framework

Developing a conceptual framework for CLIL in Chinese higher education requires grounding in several interrelated theories: CLIL core theory (4Cs and language integration principles), second language acquisition and bilingual education theory, and interdisciplinary pedagogy. This section

outlines these theoretical underpinnings, which collectively inform our proposed framework.

2.5 CLIL Core Principles: The 4Cs Framework and Dual-Focus Pedagogy

At the heart of CLIL theory is the notion of *dual-focused* instruction, encapsulated by Coyle's 4Cs framework: Content, Communication, Cognition, and Culture. These four components provide a conceptual lens to design and evaluate CLIL programs. An effective CLIL approach seeks a synergistic balance among them:

- Content: the subject matter or information that students learn (e.g. mathematics, economics, cultural knowledge). In CLIL, content drives the context for language use. A key theoretical point is that content should not be watered down excessively; rather, it should be set at a cognitively appropriate level that *challenges* students, thereby stimulating genuine intellectual engagement. Vygotsky's concept of the *Zone of Proximal Development (ZPD)* is often invoked: learning is most effective when content difficulty is just beyond students' current mastery but reachable with support. This necessitates scaffolding techniques so that students can grasp complex concepts in L2 with help (visual aids, mother-tongue explanations, pre-teaching key terms, etc.). In our framework, content selection is guided by relevance and interdisciplinarity—meaning the topics chosen should be meaningful (aligned with curriculum goals or student interests) and, when possible, draw connections across different subject areas to broaden perspective.
- Communication (Language): the target language (here, English) and its usage in the classroom. CLIL's theory emphasizes that language learning is not incidental but planned in parallel with content objectives. A useful construct is the *language triptych* (Coyle et al., 2010): language of learning (the vocabulary and grammatical structures needed to understand the content, e.g. terminology of a subject), language for learning (the functional language needed to carry out tasks, e.g. how to debate, describe a process, ask questions in L2), and language through learning (spontaneous language that emerges as students discuss or inquire about content, which can be captured and reinforced). Our framework incorporates this by insisting that for each content module, instructors identify the "language of learning" (key terms/concepts in English) and design activities that develop "language for learning" skills (like academic discussion phrases), while remaining open to new language that arises organically during content exploration. The integrated theory here draws from both CLIL and general SLA: exposure to rich input (content texts), opportunities for output (student talk/presentation on content), and form-focus when needed (teaching grammar or pronunciation that is necessary to articulate content ideas clearly) are all important. Additionally, CLIL theory accepts some use of L1 as a scaffold – strategic use of Chinese can ensure content is understood deeply, which in turn can enhance L2 development by lowering cognitive overload. Recent CLIL research encourages *translanguaging* strategies, where students leverage their full linguistic repertoire to negotiate meaning, gradually increasing L2 use as comprehension solidifies (though the exact approach must suit the context).
- Cognition: the thinking skills and cognitive processes that students engage in. CLIL's

theoretical foundation is strongly influenced by constructivist learning and Bloom's taxonomy of cognitive objectives. Because students deal with substantive content, they are naturally prompted to engage higher-order skills (analyzing information, forming opinions, solving problems) rather than just rote memorization of language forms. An interdisciplinary CLIL approach further amplifies this by asking students to synthesize and compare across domains. For example, a CLIL lesson might require students to *apply* mathematical reasoning in a physics context or to *evaluate* a social issue from scientific and ethical perspectives, all through English. This interdisciplinary cognitive engagement is seen as a catalyst for deeper learning and for language development—students have a genuine purpose to communicate when grappling with real content problems. The framework will encourage tasks that activate cognition, such as project-based learning, case studies, or research projects in English, aligned with theories of experiential learning and critical thinking development. The underlying assumption, supported by CLIL literature, is that *language acquisition is enhanced when the learner's cognitive abilities are fully involved* in processing meaningful content.

- Culture (and Community): the intercultural and contextual dimension. CLIL theory posits that learning a subject in a foreign language inherently brings a cultural component – students often gain insights into the cultures associated with that language or the global context of the content. In a Chinese CLIL context, "Culture" operates on multiple levels. It includes understanding Western perspectives (since English materials often reflect anglophone contexts), but equally important, it involves students learning to express *their own culture* (Chinese culture, local knowledge) in English. This addresses the "cultural aphasia" problem where Chinese students can discuss Western topics in English but not Chinese ones. The theoretical framework, therefore, treats intercultural competence as an explicit goal: CLIL courses should integrate content that reflects both international and Chinese contexts and encourage comparisons and reflections. This is informed by Byram's theory of intercultural communicative competence and the idea of "big C and little c" culture in language education (including both formal culture like history and everyday culture like lifestyles). An interdisciplinary approach might involve, for instance, using English to study a comparative topic such as "environmental policy in China and the UK" – blending political science and cultural studies – which compels students to operate at the nexus of two cultures. By doing so, they not only practice language but also develop a bicultural (or multicultural) awareness. In summary, culture in CLIL is not an add-on, but a context that gives content learning relevance and helps students build identity and confidence in using English academically while staying connected to their own cultural background.

In applying the 4Cs to Chinese higher education, we adhere to the principle that *none of these components should eclipse the others*: a CLIL course must avoid becoming only a content lecture (ignoring language development), or conversely a language lesson with trivial content. The interrelationship must be maintained. This principle is echoed in Chinese scholars' interpretations; for

example, local CLIL models stipulate that attention be paid to both content and language in teaching, rather than reverting to purely linguistic exercises or pure translation of technical content. The theoretical framework thus strives for an integrative pedagogy: every educational decision (from curriculum planning to classroom activity) is checked against dual objectives (Does it teach content? Does it teach language? Can it do both effectively at once?).

Interdisciplinary and Pedagogical Integration Theories

Interdisciplinarity in education is guided by theories of curriculum integration and holistic learning. One influential idea is Bruner's Spiral Curriculum, where learners revisit topics over time with increasing complexity and from multiple angles. In an interdisciplinary CLIL context, this could mean structuring an English program so that, for instance, the theme of "sustainability" is touched upon in a beginner English course through simple texts, then later in an advanced course through a scientific article or an economics case study, gradually building a multifaceted understanding of the theme. This aligns with Bruner's idea that any subject can be taught at some level to any learner, provided it is framed appropriately—which is akin to selecting content at the right cognitive/language level.

Curricular integration models (Fogarty, Drake, etc.) describe a continuum from multidisciplinary (subjects taught separately but around a common theme) to interdisciplinary (blending subjects into one combined course) to transdisciplinary (learning organized around real-world problems beyond subject boundaries). CLIL can function at any of these levels. The theoretical framework here leans towards an *interdisciplinary approach*, where English as a subject is not isolated but fused with content domains. We apply pedagogical strategies from Project-Based Learning (PBL) and Problem-Based Learning, which naturally cut across disciplines. For example, a CLIL project might be "Design a business plan for a sustainable product" – this requires knowledge of business, environmental science, and use of English persuasive language. Such an approach is supported by constructivist theory (learning by doing and from multiple sources) and has been shown to increase student engagement and skill transferability.

In summary, the theoretical framework for conceptualizing CLIL in Chinese higher education draws from CLIL's own pedagogical principles (4Cs, integration of language and content), SLA/bilingual education research (ensuring language development through input, output, interaction, and L1 support strategies), and interdisciplinary education theory (curriculum integration, project-based learning, scaffolded constructivism). These theories collectively inform the design of our proposed framework, ensuring it is rooted in established educational research while tuned to the interdisciplinary and bilingual context of Chinese universities.

3. Discussion

Building on the above theoretical foundations, we propose a structured conceptual framework for implementing CLIL in Chinese higher education that foregrounds an interdisciplinary English teaching approach. The framework comprises several interlocking components: (1) Policy and Curriculum Alignment, (2) Content & Language Integrated Course Design, (3) Instructional Strategies and

Classroom Practices, (4) Teacher Development and Collaboration, (5) Materials and Resources, and (6) Assessment and Evaluation. Each component is discussed below, along with its rationale and guidance derived from recent literature and theory.

3.1 Policy and Curriculum Alignment

Effective implementation of CLIL in universities requires alignment with educational policies and curriculum standards. In China, top-down support for content-language integration already exists in various forms – from national educational reforms encouraging bilingual courses to specific directives like the 2020 Teaching Guide for English majors which calls for integrating Chinese cultural content and innovating teaching methods. The framework's first element is to embed CLIL within the institution's curriculum architecture, rather than treating it as an ad-hoc experiment. This means when universities design or revise curricula, they should explicitly designate certain courses or modules as CLIL courses (or CLIL-enhanced). For example, a university might stipulate that out of the mandatory College English courses for all students, one will be a theme-based CLIL course (such as "English Through Global Issues" or "Scientific English Communication"). Similarly, for English majors, core courses like "Chinese Culture in English" or interdisciplinary electives can be set up following CLIL principles.

Policy alignment also involves administrative recognition that CLIL courses may need different scheduling (e.g., more contact hours due to dual focus) and smaller class sizes to facilitate interaction. University leadership should provide structural support: for instance, allocating funding for extra teaching resources or granting workload credit for the extra preparation CLIL often entails. As Li (2021) found, many Chinese universities see CLIL-type courses as an effort to improve quality and adapt to globalization, but a gap exists in consistent policy execution. Our framework suggests forming a CLIL implementation committee or working group at the institution, which includes members from language departments, content faculties, and the academic affairs office. This body can oversee the integration of CLIL into curriculum and ensure it aligns with the institution's talent development goals (e.g., producing more internationalized graduates). It can also help in drafting guidelines—such as what proportion of English vs. Chinese to use, how to select courses suitable for CLIL, and how to articulate learning outcomes that combine content and language.

Another aspect of alignment is curriculum sequencing. Interdisciplinary CLIL works best when it's part of a coherent sequence where students can progressively build language and content skills. For example, the framework envisions first-year students might take an introductory CLIL module (soft CLIL, language-led with light content), while third-year students could handle a more intensive CLIL course (harder content, near-EMI style but still language-supported). This sequencing aligns with the idea of gradually reducing scaffolds as proficiency grows. It also resonates with findings that high-level institutions in China already differentiate CLIL offerings (EAP for advanced students vs. general content for others). For less advanced student cohorts, policy might dictate more language support and careful content choice, whereas for elite programs, CLIL can push into near full-English instruction on

specialized topics.

In summary, the policy and curriculum alignment component ensures that CLIL is not an "addon" but is embedded in the educational blueprint. It requires administrative buy-in, clear curriculum integration, and possibly policy innovation (like offering dual-credit for CLIL courses that count towards both language and subject requirements). By institutionalizing CLIL, universities send a strong message of commitment, which can motivate teachers and students to take the approach seriously. It also provides a clear structure within which the other components operate.

3.2 Content & Language Integrated Course Design

At the heart of the framework is the design of the courses themselves, which must purposefully integrate content learning and language learning outcomes. Course design here refers to setting learning objectives, selecting content topics, and planning the integration of language goals for each CLIL course or module.

Learning Objectives: Each CLIL course should have dual sets of objectives from the outset: content objectives (what disciplinary knowledge or skills students should acquire) and language objectives (what communicative abilities, vocabulary, or language structures students should develop). For example, a CLIL course titled "Environmental Science in English" might have a content objective like "Understand and explain key concepts of climate change and environmental policy" and language objectives like "Develop the ability to summarize scientific information in English" and "Learn terminology related to climate science and policy." Objectives need to be specific and measurable, aligning with Bloom's taxonomy. Recent pedagogical literature emphasizes using *Can-Do statements* for CLIL: e.g. "Students can describe a scientific process in written English" (combining content and language). Designing with clear dual objectives ensures the course doesn't drift to one side (just content or just language).

Content Selection: Choosing the right content is critical, especially in an interdisciplinary approach. The framework advocates selecting content that is: (a) relevant to students' majors or general education (so it's meaningful and useful, enhancing motivation), (b) rich enough to require thought and discussion (to foster cognition), and (c) not overly specialized to the point that language support cannot bridge the gap. Policy makers interviewed in Li (2021) stressed that CLIL content in College English "can cover all things but the basic knowledge of language and language skills," implying it should be substantive, yet they cautioned against highly specialized content better suited to true EMI. In practice, interdisciplinary content could be thematic. Many Chinese CLIL courses have taken a theme-based approach – e.g. "Business and Society" for non-English majors or "Global Cultural Topics" for English majors. Themes allow inclusion of multiple disciplines: a theme like *urban development* can involve geography, sociology, and environmental science content, giving students a broad perspective while still coherent under one umbrella. Additionally, content should consider intercultural mix (include Chinese context and international context) so students can connect new info with prior knowledge and also practice articulating local topics in English. As Huang (2023) suggests, content definition in CLIL

is adaptable—it could range from national curriculum subjects to project-based topics that integrate various curriculum aspects. Thus, content selection is creative and contextual: the syllabus might list topics like "Traditional Chinese Medicine and Modern Healthcare (in English)" or "Comparative Economic Case Studies (taught bilingually)." Each topic cluster should be chosen with the question: *Does this content naturally lend itself to discussion in English and does it broaden the student's knowledge base?* If yes, it's a good candidate.

Language Integration in Planning: For each content topic or unit, course designers must identify the language demands and opportunities. This is where the *Language Triptych* comes into play. In course planning documents, for each unit we suggest including a section: "Language of/for/through learning." For instance, if a unit is on renewable energy technologies, the *language of learning* might include key terms like "solar panel, photovoltaic, grid, efficiency, etc." and perhaps complex sentence structures used in technical descriptions. The *language for learning* could involve phrases for comparing and contrasting (since students might compare energy sources), or language for describing processes ("first, the sunlight is converted to electricity…"). The *language through learning* will be collected as the course runs – perhaps new words that come up from student inquiries (maybe a student asks how to say a particular technical term in English, which then becomes a learning moment). By pre-planning two of these categories, the teacher can embed language instruction seamlessly: e.g. start the unit with a mini-glossary, or do a quick exercise on comparative adjectives if that's needed to discuss the content. This intentional integration is supported by CLIL methodology guides and ensures that language development doesn't occur by chance but is structurally mapped onto content progression.

Interdisciplinary Course Structure: The framework encourages courses that cross traditional subject lines. One model is a modular structure where each module taps a different discipline but all under a coherent theme, as mentioned. Another model is project-based: the course could revolve around a multi-disciplinary project (e.g. "design a sustainable campus" requires architectural knowledge, environmental science, and communication strategies). In designing such courses, instructors might need to consult with subject experts to ensure content accuracy and depth. For example, an English teacher planning a module on basic economics may collaborate with an economics professor to get the content right, an approach that has been successfully piloted in some universities (as noted by interdisciplinary collaborations in Canada's CLIL context) (Malmström & Zhou, 2025). This ensures academic rigor in content. The design should also outline how these disciplines connect – students benefit from explicit highlighting of interdisciplinary connections (e.g. "We learned about historical context of this issue last week in English; now we're examining its scientific aspect. How do they inform each other?").

In essence, the course design component of the framework operationalizes the theoretical 4Cs. It ensures that each CLIL course has a well-thought-out plan marrying content and language outcomes. With clear objectives, carefully chosen interdisciplinary content, and integrated language planning, courses are more likely to achieve the dual aims and avoid the pitfall of being ad hoc or superficial.

Literature from recent CLIL experiments in China supports that meticulous course design leads to more effective outcomes—courses where integration was explicitly planned yielded better student feedback and performance.

3.3 Instructional Strategies and Classroom Practices

Even with a solid course design, the real integration happens through day-to-day teaching strategies. This component of the framework provides pedagogical guidance for instructors on how to deliver CLIL lessons effectively in an interdisciplinary English classroom.

Scaffolding Techniques: As emphasized earlier, scaffolding is indispensable for CLIL. Teachers should employ a variety of scaffolding methods to bridge language gaps while tackling complex content. This includes using visual aids (diagrams, charts, videos) to illustrate content concepts, providing bilingual glossaries or allowing dictionary use, pre-teaching critical vocabulary, and using comprehension checks frequently. For example, before a lecture segment on a scientific topic, a teacher might share an outline with keywords translated into Chinese, or show an infographic labeling parts in English and Chinese. Scaffolding also extends to task instructions – giving exemplars of what a final report or presentation should look like, so students understand expectations in both content and language. Research has shown that Chinese students benefit from such clarity and support; it can reduce anxiety and encourage them to participate more actively in English. Over time, scaffolds can be gradually removed or reduced. A practical tip is to start a semester with more teacher-led support (e.g. detailed notes, summaries in Chinese if needed), and progressively shift to more student-led output with minimal L1 support by the end, reflecting growing confidence.

Interactive and Collaborative Learning: To promote both language practice and deeper understanding, CLIL classrooms should be interactive. Strategies like Think-Pair-Share, group discussions, debates, role-plays, and project work are highly recommended. These allow students to *use* English in meaningful contexts. For instance, after reading a case study (content input), students could work in groups to discuss solutions, then present their conclusions—thereby processing content and speaking/writing in English. Collaborative tasks can be structured to ensure everyone participates (assigning roles like note-taker, presenter, etc., all to be done in English). Such interactions align with SLA theory that negotiation of meaning aids language development, and with educational theory that peer discussion fosters critical thinking (Hu, 2021). Teachers should monitor group work, offering language support when groups struggle to express an idea (perhaps noting common phrases they need and writing them on the board).

Focus on Form in Context: While communication is prioritized, our framework also calls for judicious *micro-interventions* to address language form. For example, if a teacher notices many students are making a specific grammar error that impedes precise expression of content (say misuse of past tense when describing historical events), the teacher might pause the lesson for a brief focus on that form, using examples from the content to illustrate correct usage. This aligns with CLIL best practices that suggest not to correct every error (which could discourage speaking) but to target errors that block

content clarity or are frequent. Also, teaching key phrases or sentence structures for academic tasks (like how to articulate cause-effect, or how to compare theories) can be done in mini-lessons embedded in the class. It's important that form-focused instruction remains contextual – using content sentences, not isolated unrelated examples—to maintain relevance.

Translanguaging Strategies: Classroom practice in China can also strategically leverage Chinese where appropriate. For example, a quick 2-minute clarification in Chinese of a very difficult concept might allow the class to then continue the activity in English with correct understanding, rather than floundering. Teachers might allow students to initially brainstorm complex ideas in Chinese, write down some points, then help them find English translations for key terms before they present. A study on Chinese CLIL classrooms by Wang & Xing (2021) noted that *judicious L1 use* helped lower-level students keep pace and did not detract from English improvement when managed well. On the other hand, teachers should guard against overuse of L1—it should not become a crutch that prevents English practice. The framework suggests clear guidelines: for instance, class discussions and output are predominantly in English, but short peer explanations or teacher summaries in Chinese are allowed when necessary to ensure comprehension of critical content. This echoes the notion of "as much target language as possible, as appropriate". Over time, as students acclimate, the reliance on Chinese can be reduced.

Content Pedagogy Integration: CLIL instructors need to adopt some pedagogical methods of the content disciplines they cover. For example, science education often uses experiments or demonstrations – a CLIL science-in-English class might incorporate a simple experiment or simulation, with the twist that students must describe or record results in English. If covering a history topic, the teacher might use timelines or primary source analysis, just as a history teacher would, but with language support. This approach is supported by findings that CLIL should not sacrifice disciplinary authenticity; rather, merging methods yields better learning. Teachers may need to familiarize themselves with basic teaching techniques of other fields (for which cross-department workshops can help, see Teacher Development below). The interdisciplinary nature of the class can thus shine through in activities: e.g., an English class learning about economics might have students play a market simulation game (common in economics teaching) where they must negotiate prices in English.

Cultivating Cognitive and Critical Thinking: The classroom practices should deliberately include questions and tasks that push analysis, evaluation, and creation. Teachers should ask higher-order questions: "*Why do you think this policy was effective?*" or "*How would you design an experiment to test this hypothesis?*" and encourage students to respond in English. Even if students struggle to express complex thoughts fully, the attempt is valuable and teachers can reformulate or add vocabulary for them. Some Chinese CLIL interventions specifically integrated critical thinking training (e.g., Zhou et al., 2021 used CLIL to empower critical thinking strategies in foreign language teaching). The consensus is that CLIL offers a fertile ground for cognitive skill building because content provides something substantial to think *about*. Therefore, our framework envisions classroom time not just as

language drills, but as problem-solving sessions, Socratic dialogues, case study analyses, etc., conducted in English with appropriate support. This aligns with Chinese educational goals of moving away from rote learning toward more innovative, student-centered learning.

Classroom Management in CLIL: Managing a CLIL class may differ from traditional classes. Teachers must ensure that the class remains comprehensible and inclusive. One challenge is the varying language proficiency among students – stronger students may dominate discussions. Teachers should be trained in techniques like differentiated questioning (simpler questions to weaker students, more open ones to strong students) and grouping strategies (mixing proficiency levels so peers can help each other, or grouping by level for certain tasks so the teacher can give targeted help) (Zhang et al., 2024). Classroom language from the teacher is also important: speaking clearly, using paraphrasing, and occasionally repeating key points in different words or languages to confirm understanding can all aid comprehension. It's also vital to create a supportive atmosphere where mistakes (content or language) are treated as learning opportunities. Chinese students might be shy to speak up in English fearing errors; teachers should positively reinforce any attempt to communicate content, focusing on the message first before gently addressing language form if needed. This supportive climate encourages participation and gradually builds students' confidence to operate in English academically.

3.4 Teacher Development and Collaboration

For CLIL to succeed, teachers must be at the forefront of capacity building. As identified in the literature, one of the largest hurdles is the shortage of instructors adept in both content and language pedagogy. Our framework emphasizes ongoing teacher development and interdisciplinary collaboration as a core component.

Professional Development Programs: Universities should institute training workshops and courses for CLIL. These might include in-house training sessions on CLIL methodology, funding for teachers to attend external CLIL conferences, or even formal certification programs in bilingual education. Key training areas are: bilingual instructional methods (such as those discussed in the previous section), subject-matter familiarization for language teachers, and academic English enhancement for content teachers. In the Chinese context, many CLIL courses are taught by English language teachers who venture into content areas. These teachers need crash-courses or refreshers in the relevant content (for example, an English teacher assigned to teach "English for Information Technology" should receive some training in basic computing concepts). Conversely, if content professors are enlisted to teach their subject in English (the EMI approach), they need training in how to adapt their teaching for language learners – essentially CLIL pedagogical techniques, since subject expertise alone is not enough. Given the heavy emphasis on teacher ability in recent studies, it's suggested that universities define a set of competencies for CLIL teachers (like the seven abilities identified by Zhang et al. 2024) and tailor training to develop each. For example, to improve "ability to integrate language and content," a workshop could have teachers practice writing integrated lesson plans and share feedback.

Collaboration Between Language and Content Faculty: A powerful form of professional development is

direct collaboration. The framework encourages co-planning and even co-teaching between English faculty and subject faculty. For instance, an economics professor and an English instructor might jointly design a syllabus for "Economics through English," aligning the economic concepts with language outcomes, and possibly share teaching duties (one focusing more on content explanation, the other on facilitating discussion and language feedback). Such collaborative CLIL models have been piloted elsewhere and show promise in leveraging each teacher's strength (Malmström & Zhou, 2025). In a Canadian university, applied linguists and content faculty teamed up to understand each other's approaches, leading to more coherent CLIL course delivery. In China, where traditionally departments are siloed, this interdisciplinary teamwork might be novel, but it fits the ethos of CLIL integration. University administrations could incentivize it by adjusting workload accounting (two teachers for one class might normally be hard to justify, but if it's seen as a special CLIL initiative, it could be supported) or team-teaching credit.

Teacher Communities of Practice: Establishing a CLIL teacher community or interest group on campus can sustain development. Teachers can meet periodically to share experiences, teaching materials, or troubleshoot difficulties. Peer observation is another valuable tool: an English teacher might observe a science lecture in Chinese to pick up content insight, or a content teacher might observe how English classes engage students in communication. They can then observe each other's CLIL classes to provide feedback. This reflective practice is aligned with the "evaluation and reflection ability" that teachers themselves need to cultivate. By reflecting on what worked or not in a lesson (perhaps noting that students didn't grasp a concept until it was shown visually, or that a particular group task was very effective), teachers refine their approach. Action research, where teachers systematically try new techniques and measure outcomes, could be promoted as part of the CLIL rollout – contributing to scholarly understanding as well as practical improvement.

Language Support for Teachers: For Chinese teachers, teaching in English can be daunting too. Institutions should provide support such as English improvement courses for faculty, especially content specialists who are not language teachers but may need to lecture or interact in English. According to Yuan et al. (2024), students criticized some EMI teachers' English proficiency and pedagogy, preferring those with strong English and teaching skills. This suggests investing in teacher's English skills is necessary. Even English teachers may need to learn genre-specific language: teaching science in English might require them to familiarize with scientific writing conventions, etc. The professional development should thus also include raising teachers' own CALP in various fields.

Mindset and Role Evolution: Teachers might need guidance to shift from traditional roles to the more facilitative, dual-role required in CLIL. Language teachers have to become comfortable with substantive content, and content teachers have to accept that language learning needs to be part of their class outcomes. This calls for a mindset that values interdisciplinary teaching. Highlighting success stories and evidence of CLIL's benefits can encourage teachers to embrace the change (for example, showcasing that students in a CLIL course attained better presentation skills and content exam scores

than those in non-CLIL groups). Additionally, acknowledging and rewarding the extra effort teachers put in is vital. This could be through recognition awards, career advancement opportunities, or research grants for those innovating in CLIL. If teachers feel their work in developing CLIL is valued, they will be more likely to commit despite the challenges.

In summary, teacher development and collaboration form the backbone of the CLIL framework. Without skilled and confident teachers, even well-designed programs will flounder. The literature consistently points to teacher quality as the linchpin for CLIL success. By investing in comprehensive training and fostering a collaborative interdisciplinary teaching culture, Chinese universities can build a cadre of educators capable of delivering the promise of CLIL.

3.5 Materials and Resources

Instructional materials are another crucial element. CLIL in China often suffers from a lack of ready-made textbooks or resources that suit the dual focus. The framework emphasizes developing and curating materials that are content-rich and language-accessible.

Developing Authentic yet Accessible Materials: One of the Chinese interpretations of CLIL calls for *jiaocai* – designing authentic learning materials. Authentic materials (articles, case studies, videos originally intended for native speakers) provide real-world content that can be engaging and up-to-date. However, they may be linguistically challenging. Teachers and curriculum designers should select or adapt authentic materials to appropriate levels. For example, an English newspaper article about a scientific discovery can be edited for length and annotated with glossaries for students at intermediate level, preserving the core content while easing language difficulty. There is also scope for writing localized CLIL materials – such as a bilingual booklet on Chinese architectural history for an architecture-English CLIL class, ensuring it contains key English terms but explanations in a mix of languages. Unfortunately, as Huang (2023) noted, there are very few textbooks available that address Chinese culture in English; most existing ones are for translation majors. This gap means teachers often have to be material creators. Our framework might encourage universities or publishers to commission the development of CLIL textbooks or e-resources targeted at Chinese learners' needs in various disciplines. In the interim, teachers can compile course packs with a mix of sources: excerpts from English textbooks, online articles, lecture slides with bilingual labels, etc.

Use of Technology and Multimedia: Modern CLIL can leverage technology to supply rich input. For instance, educational videos (with subtitles options), podcasts, and interactive simulations in English can serve as excellent content resources that also train listening skills. Zhao & Lei (2017) discuss technology-enhanced CLIL in Chinese tertiary classes, which can provide both content and language support through multimedia and online platforms. In practice, a teacher might use a short documentary in English as a springboard for discussion, or have students complete a webquest (online research activity) on a topic, using English internet sources. Technology can also help differentiate materials – students with higher proficiency can be directed to read a full journal article, while others use a simplified summary, then all contribute knowledge in class. Additionally, language learning apps or

modules can be integrated for self-study of vocabulary relevant to the content (some CLIL programs assign students digital flashcards or quizzes on terminology as homework, blending content study with language practice). The framework advocates integrating such resources to enrich the input and give students varied modes of engagement (visual, auditory, textual).

Language Support within Materials: All materials should embed language aids. For reading texts, include glossaries or marginal notes for difficult phrases. For tasks, provide sentence starters or useful phrases boxes (like "In my opinion…", "The data suggests that…"). Worksheets might have dual-language instructions if needed at lower levels. The idea is that materials themselves become a form of scaffolding, not just the teacher's live support. Xie (2024), in her interdisciplinary business English case, likely had to prepare business case studies with annotations to guide English majors unfamiliar with certain business jargon (Famularsih, 2024). Similarly, in Chinese culture CLIL classes, instructors have compiled glossaries of culture-specific terms in English and Chinese so students can discuss concepts like *Spring Festival* or *Confucianism* in English accurately.

Cultural and Localized Content Materials: Including Chinese context in materials is key for engagement and cultural goals. Materials should not all be foreign; they should also present Chinese knowledge in English. For example, an English reading about the Great Wall or an economic case on Alibaba provides local relevance. Creating bilingual or English materials on Chinese topics is a national need, as pointed out by the scarcity of such textbooks. The framework encourages investment in developing those, which aligns with the national strategy to have Chinese culture "go global" and to strengthen students' ability to express their own culture in English.

In short, the materials and resources component ensure that the content-language integration is supported by well-crafted, appropriate inputs and tools. The literature implies that without proper materials, teachers resort to either purely English native materials (which can overwhelm students) or dumbed-down language texts (which lack real content). Our framework addresses this by calling for a balanced creation and curation of resources. Enhanced materials will make classes more effective and maintain student interest, as they feel they are learning "real stuff" and real English simultaneously.

3.6 Assessment and Evaluation

Assessment in CLIL must reflect the dual learning objectives and provide feedback on both content mastery and language development. The framework's final component deals with how to assess student learning and how to evaluate the CLIL program itself for improvement.

Dual-Objective Assessment: In CLIL courses, it is crucial to design assessments that cover content and language. This might involve integrated tasks – for example, a student might give a presentation on a scientific topic (content) and be graded on both the scientific accuracy/analysis and the clarity and correctness of their English. Alternatively, there could be separate sections or scoring rubrics: a written exam could have part A focusing on key content concepts (graded for content understanding, possibly allowing some answers in Chinese if absolutely necessary to gauge understanding) and part B focusing on English writing about those concepts (graded for language). The approach can vary depending on

the level: higher proficiency classes might fully integrate (since language issues won't prevent showing content knowledge), whereas in lower proficiency classes, teachers might need to separate content vs. language scores to be fair. Recent Chinese CLIL research indicates that assessment is an under-researched area, but consensus is emerging that clarity and transparency in assessment criteria help. Students should know that they are expected to learn the material and improve their English; rubrics given in advance can outline points for content (e.g., accuracy, completeness, critical thinking) and for language (e.g., vocabulary use, grammatical accuracy, coherence in writing or speech).

Program Evaluation: Beyond student assessment, evaluating the CLIL program's effectiveness is essential for sustainability. This includes collecting data on student outcomes (both content exam scores and English test scores) to see if CLIL groups perform as expected. It also involves surveying student and teacher satisfaction. As the literature shows, many Chinese CLIL studies examine perceptions. This should continue as feedback loops: if students report, for example, that they felt overwhelmed by too much new vocabulary in a course, the program can adjust to include pre-term language bootcamps or adjust pacing. If teachers report difficulty finishing the syllabus because of extra time needed for language work, perhaps content load needs to be trimmed. Regular review meetings and reports can help refine the framework's implementation.

Standardization vs. Flexibility: The framework acknowledges that not all CLIL courses will be assessed identically. However, having some standards or common principles is useful. For instance, a principle could be: *Every CLIL course will have at least one assessment that involves extended English output (essay, presentation)* to ensure language production is evaluated. Another could be: *Content knowledge can be partially demonstrated in Chinese if needed, but language competence must be demonstrated in English.* Such principles ensure a baseline consistency. Meanwhile, flexibility allows instructors to tailor to their context (some might do more continuous assessment, others might include a final exam, etc., depending on class size and nature).

Sharing Best Practices in Assessment: As CLIL is relatively new in China, teachers might be unsure how to grade dual-focused tasks. Training sessions specifically on assessment should be provided (linking back to teacher development). Additionally, creating sample rubrics and sample student work (with grading) as references can be extremely helpful. Over time, a bank of validated assessment tools could be developed. This is something researchers could assist with, by studying which types of assessment best capture learning in CLIL settings.

By incorporating a robust assessment component, the framework ensures accountability and continuous improvement. It also signals to students that both content and language matter – aligning their efforts with the intended outcomes. Proper assessment strategies help avoid scenarios where either content or language is neglected because "it's not graded." Instead, students will strive to learn the material and improve their English knowing both are integral to success in the course.

Conclusion

Content and Language Integrated Learning (CLIL) offers a compelling interdisciplinary approach to

English teaching in Chinese higher education, addressing the nation's dual aspiration to enhance English proficiency and deepen subject-matter learning. This paper has proposed a structured conceptual framework for implementing CLIL in Chinese universities, drawing on recent scholarship and theoretical insights to ensure both *conceptual clarity* and *pedagogical relevance*. The framework emphasizes that successful CLIL is not merely about teaching in English, but about purposefully integrating content and language objectives at every level – from curriculum design and classroom practice to materials and assessment.

In reviewing the literature from 2021–2025, we found strong evidence that CLIL can yield multifaceted benefits for Chinese students: improving linguistic skills, fostering critical thinking, and increasing engagement through relevant content. At the same time, challenges such as uneven teacher preparedness, variability in student language levels, and scarcity of appropriate materials have been documented. Our proposed framework directly addresses these issues by incorporating comprehensive teacher training, scaffolding strategies, and resource development as integral components. It aligns with the Chinese context by including local cultural content and bilingual support, acknowledging that adaptation is key – CLIL in China may often take a "soft CLIL" form initially, led by language teachers and limited in scope, but with potential to evolve into deeper interdisciplinary collaborations as capacity grows.

A central thesis of this paper is that interdisciplinary English teaching via CLIL can break the traditional silo of language instruction, thereby producing graduates who are not only competent in English, but also able to apply their language skills to think critically and work professionally across domains. This supports China's goal of nurturing "versatile talents" for a globalized world. By integrating content ranging from science and technology to humanities and social issues into English classes, students gain knowledge and vocabulary in tandem, making their learning more meaningful and transferable. The framework's holistic approach – informed by the 4Cs and education best practices – ensures that neither language nor content is taught in isolation, reflecting a more *real-world mode of learning*. After all, outside the classroom, English is a medium to engage with interdisciplinary information; CLIL simulates and scaffolds this reality within education.

Pedagogical Implications: For educators and institutions, adopting this framework means undertaking curriculum reform and capacity building. It calls for policy-makers to support CLIL initiatives with resources and favorable policies (such as curriculum integration and teacher incentives). Teachers are encouraged to embrace new roles as both language and content facilitators, continually developing their skills in both areas. Collaboration emerges as a linchpin – between language and subject teachers, among teachers and material developers, and between teachers and learners (through interactive methodologies). The framework provides a guide, but implementation will require trial and reflection. Not every attempt will be immediately successful; some content choices or techniques may falter, which is why ongoing evaluation and flexibility are built into the model.

Theoretical Contributions: Conceptually, this paper contributes to the discourse on localizing CLIL. By

synthesizing Chinese and international perspectives, we have outlined how global CLIL theory can be adapted to a Chinese higher education milieu. The inclusion of Chinese educational principles (e.g. *yuren* holistic student development and emphasis on Chinese culture confidence) with CLIL's core tenets results in a more culturally responsive framework. This may serve as a reference for other non-Western contexts similarly seeking to blend bilingual education with indigenous priorities. Furthermore, the focus on interdisciplinarity pushes CLIL theory towards a more integrative vision beyond single-subject bilingual teaching, suggesting a model of English instruction that is truly cross-curricular.

Limitations: As a conceptual study, this paper did not provide empirical validation of the proposed framework. Implementing all components simultaneously can be ambitious, and real-world constraints (like large class sizes or exam-oriented pressures) may necessitate modifications. Also, while we prioritized recent literature to capture the current state (2021–2025), CLIL is a moving target – ongoing developments (such as post-pandemic hybrid learning or advances in educational technology) could influence the practicality of some recommendations. We also acknowledge that our focus has been on English as the additional language; similar principles could apply to other foreign languages in China's universities, though English dominates the CLIL landscape currently.

Future Research: Going forward, empirical research is needed to test and refine this framework. Pilot programs implementing these ideas could be studied to examine outcomes: Do students in CLIL courses show significant improvement in both content exams and English tests compared to non-CLIL peers? How do students of different proficiency levels fare, and what scaffolding is most effective? Qualitative research could explore teacher experiences adopting interdisciplinary CLIL – their challenges, growth, and the institutional factors that support or hinder them. Additionally, long-term studies might investigate the impact of CLIL on graduates' skills in the workforce or further studies, addressing the ultimate question of educational effectiveness. Given that current Chinese CLIL research has left certain gaps (like assessment and material effectiveness), future studies should target those, for instance by experimenting with different assessment models or developing prototype textbooks and evaluating their usage.

In conclusion, *Conceptualizing CLIL for Chinese Higher Education* is both timely and necessary as universities strive to produce graduates adept in content knowledge and communicative skills. An interdisciplinary English teaching approach, underpinned by a robust conceptual framework, can transform the traditional college English curriculum into a more dynamic, relevant, and empowering experience for students. By carefully integrating content and language, and supporting this integration through policy, pedagogy, and resources, Chinese higher education can "kill two birds with one stone" – advancing knowledge and language competence together. This endeavor ultimately contributes to the broader goals of educational innovation and internationalization, aligning with China's vision of building world-class universities and a learning society attuned to the demands of the 21st century. The journey to widespread CLIL adoption may be gradual, but with a clear framework in hand and evidence

accumulating of its benefits, stakeholders can proceed with confidence that the effort will yield substantial educational dividends for years to come.

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