

A STUDY ON CONTENT-BASED INSTRUCTION (CBI) COURSE DESIGN FOR CHINESE AS A SECOND LANGUAGE—A CASE STUDY OF THE “5G MARKET” THEME SESSION

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Abstract

This study explores the application of Content-Based Instruction (CBI) in teaching Chinese as a second language through the design and implementation of a three-hour thematic unit on the "5G Market" for intermediate-level learners. Following a content-driven approach, the course integrates adapted news discourse on 5G technology and its market implications, with activities sequenced as cognitive activation, linguistic scaffolding, deep processing, and integrated output. A Focus on Form strategy is employed to balance content depth with language accessibility. Data collected from ten learners' anonymous written feedback were analyzed qualitatively. Results indicate that the course enhanced learner motivation, improved academic Chinese proficiency, increased language confidence, and deepened understanding of contemporary China. The findings support the effectiveness of CBI in fostering language-content integration. The study also discusses implementation challenges—particularly instructor expertise and material adaptation—and suggests future directions, including the development of diverse thematic units, shared teaching resources, and mixed-methods evaluations. Overall, this case offers a replicable framework for shifting CSL instruction from skill-based training toward the cultivation of subject-specific literacy and cross-cultural competence.

Keywords: Content-Based Instruction; Chinese as a Second Language; theme-based teaching. 5G; intermediate learners

1. Introduction

In contemporary society characterized by the deep integration of globalization and informatization, language instruction has moved beyond the mere transmission of traditional grammatical structures and communicative functions. There is an increasing emphasis on achieving the synergistic development of language proficiency and disciplinary knowledge within authentic and meaningful contexts. Content-Based Instruction (CBI) has emerged as a significant pedagogical paradigm under these circumstances. Its core concept lies in anchoring language teaching upon the learning of subject-matter content, thereby enabling learners to naturally acquire language skills in the process of gaining knowledge. This model is particularly well-suited for intermediate and advanced second language learners, as it can effectively address common issues in traditional instruction, such as insufficient motivation for language learning and weak pragmatic competence in real-world situations. Furthermore, it provides a systematic pathway for teaching Chinese for specific purposes, such as Academic Chinese and Professional Chinese.

In the field of teaching Chinese as a second language, there has also been active exploration of CBI applications in recent years. Multiple course practices have been developed, particularly in specialized areas like Scientific and Technological Chinese, Business Chinese, and News Chinese. However, existing research predominantly focuses on theoretical discussions or the construction of macro-level curricular frameworks. There remains a notable scarcity of empirical case studies detailing the micro-level instructional design, material development, and effectiveness evaluation for specific thematic topics. How can a Chinese course be designed that aligns with learners' language proficiency while deeply integrating cutting-edge disciplinary content? How can the teaching of linguistic forms be balanced with content depth? What are the genuine experiences and gains of learners in such a course? These questions still require in-depth answers through specific instructional design and practical feedback.

This study takes the theme of the “5G Market”—a topic combining technological frontiers with socioeconomic influence—as an example, attempting to construct a comprehensive CBI-based Chinese course plan. Targeting intermediate-level Chinese language learners, the course unfolds through two concentrated class sessions (totaling 3 hours), revolving around content such as 5G technology development, industrial chain structure, market competition, and socioeconomic impacts. It aims to achieve the following objectives: First, to enhance learners' Chinese comprehension and expressive ability within professional contexts. Second, to help learners systematically understand foundational knowledge related to 5G and its industrial development trends. Third, to explore the concrete pathways and methods for implementing the CBI model in Chinese language teaching. This paper will present the course design and teaching procedures in detail. Subsequently, it will assess the course implementation outcomes through a qualitative analysis of in-depth evaluations from ten participating learners. Furthermore, it will discuss the applicability, challenges, and prospects for promotion of the CBI model in Chinese language teaching, aiming to provide actionable

reference cases for curricular innovation and disciplinary integration practices in Chinese second language instruction.

2. Literature Review

Content-Based Instruction (CBI), as an instructional approach that systematically integrates subject-matter content with language learning objectives, has provided a significant paradigm for second language teaching through its theoretical and practical development. This chapter aims to review the core theoretical framework of CBI, its current application in the field of Chinese as a Second Language (CSL) teaching, and the role of learner evaluation in course design and optimization, thereby establishing the theoretical foundation and positioning for the design of the “5G Market” thematic course in this study.

2.1 Theoretical Evolution and Core Principles of Content-Based Instruction (CBI)

The roots of CBI can be traced back to the successful practice of immersion education in Canada during the 1980s (Brinton et al., 2003). Its core proposition is that language is a tool for acquiring knowledge, not the ultimate goal of learning; the most effective language learning occurs when learners use the target language for meaningful communication and cognitive processing (Met, 1999). CBI is not a single teaching method but rather a “meta-strategy” encompassing various models, common ones include theme-based, sheltered, and adjunct instruction (Lyster & Ballinger, 2011).

Despite differing models, they share the common principle of adhering to a “content-driven” approach, meaning the curriculum’s organizational structure revolves around subject-matter content, with language learning objectives serving the comprehension and expression of that content (Stoller & Fitzsimmons-Doolan, 2017). Extensive research indicates that CBI can significantly enhance learners’ motivation, language fluency, academic language ability, and depth of cultural understanding of the target language (Dalton-Puffer, 2011; Lo, 2019). However, its implementation also faces challenges, such as the dual requirement for teachers’ subject-matter knowledge and language teaching proficiency, and the need to balance content depth with the systematicity of language instruction (Tedick & Cammarata, 2012).

2.2 Application and Research of CBI in Teaching Chinese as a Second Language

In the field of Chinese language teaching, the application and research of CBI have gained increasing attention with the growing demand for specialized Chinese education. Early practices and research primarily focused on Chinese for Academic Purposes (CAP) and Chinese for Specific Purposes (CSP), such as Business Chinese, Legal Chinese, and Medical Chinese (李宇明, 2018). In recent years, with the rising influence of China in global technology and economy, teaching Scientific and Technological Chinese has gradually become an emerging focus (张洁, 2020). Related course designs attempt to integrate cutting-edge topics like artificial intelligence, e-commerce, and climate change into intermediate and advanced language instruction (Wang & Fang, 2022).

However, existing research has certain limitations: first, most studies concentrate on

describing course frameworks within higher education settings, with insufficient empirical research on specific, micro-level instructional unit design, methods for adapting authentic materials, and classroom activity organization (Liu, 2021); second, teaching content is sometimes confined to traditional topics, lacking close integration with the rapidly evolving realities of Chinese society and globally relevant issues; third, empirical assessment of learners' cognitive processes, affective experiences, and learning outcomes in CBI courses, especially systematic qualitative feedback analysis, remains relatively weak (Chen, 2019). Therefore, developing a CSL-CBI course case that closely aligns with contemporary real-world issues, features meticulous design, and is validated by learner feedback holds significant practical and theoretical value.

2.3 The Role of Learner Evaluation in Course Design and Instructional Optimization

Learner evaluation is a core basis for course assessment and iterative optimization. In the field of education, formative assessment and student learning experience feedback are widely recognized as crucial for improving teaching practices and enhancing learning outcomes (Hattie, 2009). In the context of CBI, collecting learner feedback on course content comprehensibility, material suitability, activity engagement, and dual gains in language and knowledge is particularly important (Grabe & Stoller, 2018). Such feedback can not only reveal whether the course design has successfully achieved the dual objectives of “Content and Language Integrated Learning” (CLIL) (Coyle et al., 2010) but also expose potential tensions teachers may face in managing content complexity versus language accessibility (Kong, 2015). Through systematic analysis of learner evaluations, teachers and researchers can more precisely adjust the difficulty of teaching materials, optimize classroom interaction design, and clarify the focus of language support, thereby making CBI courses more efficient and learner-centered (Bruton, 2013).

2.4 Positioning of This Study

In summary, this study aims to address the gaps in existing CSL-CBI teaching research. By designing and implementing a CBI instructional unit centered on the contemporary, interdisciplinary hot topic of the “5G Market”, this study will elaborate in detail the entire process from content selection and material adaptation to activity design and vocabulary/grammar support. More importantly, this study will systematically collect and analyze learners' qualitative evaluations to assess the course effectiveness, thereby providing a concrete, referential empirical case on how the CBI model can effectively integrate cutting-edge content, cater to the needs of intermediate learners, and achieve the synergistic attainment of both language and knowledge objectives in Chinese language teaching.

3. Course Design: A Case Study of the “5G Market”

The core of this study is the development and implementation of a theme-based instructional unit that strictly adheres to the principles of Content-Based Instruction (CBI) and

targets intermediate-level Chinese language learners. Centered on the content of the “5G Market”, the course aims to construct a teaching environment in which language learning and the acquisition of specialized knowledge are deeply interwoven. This section will elaborate in detail on the design philosophy, specific constituent elements, and implementation procedures of the course, while providing an in-depth analysis of the pedagogical rationale underpinning it.

3.1 Course Philosophy and Theoretical Foundation

This course design is grounded in the core concept of CBI, which posits that language is a tool for learning content, and content provides a meaningful context for language learning (Brinton et al., 2003). The course does not treat 5G knowledge merely as background embellishment for language teaching; instead, it places it at the center of the curriculum’s organization. The instructional objectives for language skills (listening, speaking, reading, and writing) are all structured around understanding and expressing content related to the 5G theme, thereby achieving a genuinely “content-driven” approach (Stoller & Fitzsimmons-Doolan, 2017).

In the design process, particular reference was made to the developmental theory of “Cognitive Academic Language Proficiency” (CALP) (Cummins, 2008). The 5G theme involves abstract concepts such as technological evolution, industrial chains, and economic impacts, requiring students to move beyond Basic Interpersonal Communication Skills (BICS) and employ higher-order cognitive skills such as analysis, comparison, and evaluation, along with the corresponding academic language. Therefore, both the course materials and activities are dedicated to constructing “cognitive scaffolding” to assist students in developing their academic Chinese proficiency while processing complex content (Lyster & Ballinger, 2011).

Furthermore, the course adheres to a balance between the “Input Hypothesis” and the “Output Hypothesis” (Krashen, 1985; Swain, 2005). It provides substantial “comprehensible input” ($i+1$) through adapted authentic texts, charts, and other materials. Simultaneously, it mandates students to produce “comprehensible output” through tasks such as question-and-answer sessions, paraphrasing, chart descriptions, and assignment presentations, thereby promoting the automatization and internalization of language abilities.

3.2 Dual Structure of Instructional Objectives

The course objectives are clearly divided into content objectives and language objectives, which mutually support each other, reflecting the dual focus of CBI.

Content Knowledge Objectives:

Upon completion of this course, students will be able to systematically outline the developmental trajectory and key characteristics of mobile communication technology from 1G to 5G, explain the basic structure of the 5G industry chain (upstream, midstream, downstream) and the major Chinese enterprises involved therein, analyze the potential socioeconomic impacts and market challenges arising from the commercialization of 5G technology, describe

the competitive landscape among major Chinese telecommunications operators in the 5G market, and, based on the acquired knowledge, evaluate the potential driving role of 5G technology in the future development of various industries.

Language Proficiency Objectives:

Upon completion of this course, students will be able to understand and accurately use a range of intermediate-to-advanced specialized vocabulary and terminology related to communication technology and the market economy (e.g., “基站” [base station], “频谱” [spectrum], “产业链” [industrial chain], “复合年增长率” [compound annual growth rate], “部署” [deployment]). Concurrently, they will be able to identify, understand, and appropriately employ common idioms, idiomatic expressions, and specialized vocabulary with metaphorical meanings in specific contexts (e.g., “指日可待” [just around the corner], “厮杀” [fierce competition], “上游/中游/下游” [upstream/midstream/downstream]).

Additionally, by analyzing textual structures such as parallelism and antithesis (e.g., in paragraphs describing the industrial chain), students will further enhance their reading comprehension abilities for Chinese academic texts. Building on this, students will be capable of delivering coherent oral presentations and engaging in question-and-answer sessions on 5G-related topics, and they will be able to paraphrase and summarize textual information in their own words. Ultimately, students will possess the ability to write concise analytical texts in response to comprehensive questions related to the course content.

3.3 Principles for Designing and Developing Teaching Materials

Teaching materials are crucial to the success of a CBI course. All reading materials in this course are based on authentic Chinese news articles and industry reports but have undergone systematic adaptation, guided by the following principles (adapted from Grabe & Stoller, 2018):

Balancing Authenticity and Accessibility:

The core information, key expressions, and textual logic of the materials preserve the authenticity of journalistic style. However, language difficulty is adjusted to align with students' "zone of proximal development" (Vygotsky, 1978) through measures such as controlling sentence length, simplifying complex syntactic structures, and explaining new concepts with familiar vocabulary.

Integrating Content and Language Focus:

In the texts, boldface is used to highlight intermediate-to-advanced general vocabulary requiring focused learning, *red* marks idioms and set phrases, and underlining identifies typical word-formation patterns (e.g., "...化"). This visual marking system naturally directs students' attention to linguistic forms without disrupting content coherence, thereby promoting "noticing" (Schmidt, 1990).

Supporting Multimodal Input:

In addition to texts, the course incorporates three charts (see appendix 3) to present technical parameters and functional evolution in an intuitive visual format. This integration of text and visuals not only lowers the barrier to comprehension posed by text-only materials but also provides students with opportunities to acquire and integrate information from different modalities, aligning with multimodal learning theory (Mayer, 2009).

3.4 Instructional Activity Sequence and Pedagogical Analysis

The total course duration is three hours, divided into two consecutive class sessions. The activity sequence is meticulously designed to progressively guide students from content perception to language production.

Alignment with the Three Design Principles (3.3)

The six instructional activities below are systematically mapped to the three material design principles outlined in Section 3.3. Table 1 summarizes how each principle is operationalized in specific activities.

Table 1. Alignment of Instructional Activities with Material Design Principles

Design Principle (3.3)	Corresponding Activities (3.4)	Operationalization
Balancing Authenticity and Accessibility	(1) Orientation; (2) Guided Presentation; (3) Intensive Reading 1	Orientation activates prior knowledge to reduce cognitive load; charts provide visual scaffolding for authentic texts; adapted articles control sentence length while preserving journalistic style
Integrating Content and Language Focus	(3) Intensive Reading 1; (5) Intensive Reading 2; (6) Assignment Presentation	Visual marking system (bold, red, underline) directs attention during reading; explicit instruction targets marked items; output tasks require using learned forms
Supporting Multimodal Input	(2) Guided Presentation; (3) Intensive Reading 1; (5) Intensive Reading 2	Charts provide visual entry to technical content; texts and charts are used iteratively across activities; multimodal input reduces comprehension barriers

S1. First Class Session: From Cognitive Activation to In-Depth Reading

(1) Orientation Activity (10 minutes) – Activating Schemata

The instructor projects four questions on the screen and gives students 2 minutes to think individually:

- *Q1: What features does your current mobile phone have?*
- *Q2: What do you know about the history of mobile phone functions? (You may describe how your parents' or grandparents' phones differ from yours.)*
- *Q3: Have you heard of 5G? What do you know about it?*
- *Q4: What do you expect from 5G products?*

Students then share responses in pairs (3 minutes) before the instructor invites 3–4 volunteers to share with the whole class. The instructor records key vocabulary on the whiteboard (e.g., 网速、流量、信号、功能) for later reference. This activity aims to activate students' existing background knowledge (schemata), reduce anxiety toward the new topic, and provide the instructor with diagnostic assessment to understand students' starting points (Nassaji, 2015).

(2) Guided Presentation Activity (15–20 minutes) – Building Content and Language Scaffolding

The instructor distributes three charts (see Appendix 3) and projects them on the screen.

Phase 1 (5 minutes): Using a pointer, the instructor models chart reading: pointing to Chart 1, column 1, saying "1G 手机的速率为2.4K"; then to Chart 2, column 2, saying "2G 手机的网络传输速率为200K".

Phase 2 (5–8 minutes): Students are called on individually to read the remaining columns. The instructor provides corrective feedback on pronunciation and word order.

Phase 3 (5–7 minutes): The instructor asks comparative questions: "Looking at Chart 3, what functions does 3G have that 2G does not?" Students answer in complete sentences. The instructor writes sentence frames on the board: "与 X 相比, Y 增加了……" / "X 不具备……功能, 而 Y 可以……"

This segment not only conveys the core content framework but, more importantly, provides students with linguistic models for describing data and making comparisons through instructor modeling. This represents a "scaffolded" transition from visual information to verbal expression, preparing students for subsequent engagement with more complex textual language (Gibbons, 2015).

(3) Intensive Reading Activity 1 (50–55 minutes) – Focused Input and Negotiation of Form

Students read the article "The Prospects and Future of the 5G Market." Students receive a 4-page handout including (a) Article 1, (b) Vocabulary List of Proper Nouns 1 (8 items with English explanations), (c) List of Questions 1 (8 questions). The activity is divided into three phases:

Independent Reading with Tool Assistance (25–30 minutes): Time allocation: 25 minutes total. The instructor announces: "You may use dictionaries, phones, or computers. First, scan the vocabulary list (2 minutes). Then read the article (15 minutes), underlining answers to the questions as you find them. Finally, review your answers (8 minutes)." The instructor circulates, noting common difficulties (e.g., students struggling with "复合年增长率" or "频谱") and offers individual help. Students are encouraged to use tools such as dictionaries to foster autonomous learning strategies.

Targeted Question-and-Answer (10 minutes): A list of questions guides students in locating information and achieving preliminary comprehension, ensuring a foundational understanding of the content. The instructor calls on different students for different questions

and encourages students to rephrase sentences from the article in their own words instead of copying directly as answers.

Explicit Language Form Instruction (15 minutes): The instructor provides focused explanations of the idioms and set phrases marked in the text. This phase temporarily "focuses on form" by extracting linguistic forms from the content for systematic explanation and exemplification, thereby deepening students' awareness of specific language items (Long, 1991). Handouts are distributed, and the explanation covers interpretation and example sentences for each idiom, enabling students to understand and apply these expressions concretely.

(4) Assigning Homework (5 minutes) – Extending Learning and Preparation

Post-class reading materials and tasks are distributed, extending classroom learning to outside of class and preparing students for the discussion and presentation in the second session. The instructor explains the three tasks, specifies the submission deadline (Friday 9:00 PM), and reminds students that they will present their answers orally in the next session.

S2. Second Class Session: From Knowledge Integration to Comprehensive Output

(5) Intensive Reading Activity 2 (50–55 minutes) – Deepening Content and Textual Awareness

The structure is similar to the intensive reading activity in the first session (independent reading with tool assistance → targeted Q&A → explicit language form instruction), but the content focuses on the article "China's 5G Market", delving deeper into the industrial chain and market competition. The instructor specifically guides students to notice the parallel structure of "上游, 中游, 下游" (upstream, midstream, downstream) in the text, which is not only a rhetorical device but also a common logical organizational form in Chinese academic texts. By analyzing the textual structure, students' academic text schemata are cultivated.

Difference from Activity 3: While Activity 3 focuses on macro-level industry prospects (global perspective, consumer behavior, market obstacles), Activity 5 shifts to China's domestic market. The linguistic focus also differs: Activity 3 emphasizes idioms and set phrases (e.g., 毋庸置疑、指日可待、望而却步), whereas Activity 5 targets metaphorical extensions of spatial terms (上游/中游/下游) and competitive vocabulary (厮杀). This progression moves from general to specific content and from fixed expressions to productive word-formation patterns.

(6) Assignment Presentation (35–40 minutes) – Integrated Output and Assessment

This is the culmination and integrative phase of the course. Students orally report on their completed homework and answer questions. This task constitutes an "authentic task," requiring students to synthesize and reorganize the content and linguistic knowledge acquired across both sessions for expression. The instructor's feedback (evaluation, correction) during this process is crucial for the development of students' interlanguage (Lyster & Ranta, 1997). This is not merely an assessment component but also a collaborative process of meaning negotiation and language refinement.

Time allocation: 35–40 minutes total.

Procedure:

- (a) The instructor randomly selects 5 students (each receives approximately 2 minutes for presentation + 1 minute for Q&A).
- (b) Each student states which Task question(s) they will answer, then presents their response without reading directly from a script.
- (c) After each presentation, the instructor asks one follow-up question (e.g., *"You mentioned that 5G will benefit healthcare. Can you give a specific example from the reading?"*).
- (d) The instructor provides corrective feedback on 2–3 language errors per presentation, focusing on vocabulary misuse (e.g., confusing 驱动 with 推动) or structural issues.
- (e) Peers are invited to ask one question each if time permits.

Grading criteria are displayed on the screen: content accuracy (40%), language use (30%), fluency (20%), and response to questions (10%).

Summary of Alignment with Section 3.3

In sum, the six activities operationalize the three design principles as follows:

- Principle 1 (Balancing Authenticity and Accessibility) is realized through the orientation activity (activating schemata), guided presentation (visual scaffolding), and both intensive reading activities (adapted texts with controlled syntax).
- Principle 2 (Integrating Content and Language Focus) is realized through the visual marking system in reading materials, explicit form-focused instruction sessions, and output tasks in homework presentations that require using target vocabulary.
- Principle 3 (Supporting Multimodal Input) is realized through the iterative use of charts and texts across activities, providing multiple entry points to the same content.

This alignment ensures that the design principles stated in 3.3 are not merely theoretical but are systematically embedded in every stage of the instructional sequence.

3.5 Assessment Strategy

Course assessment adopts a combined approach of formative and summative evaluation:

Formative Assessment: This encompasses teacher observation and immediate feedback embedded in classroom question-and-answer sessions, teacher-student interactions, and assignment presentations.

Summative Assessment: The post-class homework (three tasks) serves as the primary summative assessment tool. The task design covers deep vocabulary understanding (polysemy discrimination), sentence generation, and comprehensive content elaboration, thoroughly examining students' mastery of content and language application ability without immediate classroom support.

This complete course design, through its interlinked stages, meticulously crafted materials, and multi-layered interactions, strives to faithfully embody the theoretical essence of CBI in practice, offering intermediate Chinese learners a challenging yet well-supported

content and language integrated learning experience.

4. Learner Evaluation and Analysis of Teaching Effectiveness

To thoroughly assess the effectiveness of this course design, the researcher collected written anonymous feedback from all ten participants immediately after the course concluded. Table 2 summarizes the key themes emerging from the ten evaluations (full original text available in Appendix 1). Through systematic thematic analysis of these qualitative data, we can validate the theoretical assumptions of the course design and evaluate its implementation outcomes from the learners' perspective. The analysis below is organized into three interconnected dimensions: (4.1) motivation and situated learning, (4.2) language-cognition dual development, and (4.3) interaction and learner autonomy. Section 4.4 then synthesizes these findings and discusses limitations.

Table 2. Summary of Learner Feedback Themes

Theme	Evaluation Numbers	Representative Quotes
Content relevance and motivation	#1, #2, #9	"The content is both cutting-edge and practical" (#1); "This is not just a language lesson but also a window into contemporary Chinese society" (#9)
Material accessibility	#3, #7	"Materials preserve authentic Chinese expressions while avoiding overly obscure vocabulary" (#3); "Structure was clear and pace appropriate" (#7)
Language and knowledge integration	#2, #5, #8, #10	"Broadened my knowledge base while improving Chinese proficiency" (#2); "Vocabulary instruction helped me understand Chinese expression habits" (#5)
Interaction and confidence	#4, #6, #8	"Boosted my confidence in oral expression" (#4); "Encouraged paraphrasing in our own words" (#8)
Autonomy and challenge	#6, #10	"Homework tasks are both challenging and engaging" (#6); "Balance between teacher guidance and autonomous learning" (#10)

4.1 Analysis of Evaluations: Motivation Stimulation and Situated Learning

4.1.1 Overview of Findings

Multiple learners explicitly attributed their heightened engagement to the authentic and contemporary nature of the course content. Evaluations #1, #2, and #9 directly mentioned that the content was "close to reality," "naturally integrated," and "sparked interest in technology and the economy." Specifically:

- Evaluation #1: "These two lessons integrate the hot topic of 5G technology with Chinese language learning, making the content both cutting-edge and practical."
- Evaluation #2: "The course skillfully integrates specialized content from fields like technology and economics into language teaching, allowing me to broaden my

knowledge base while improving my Chinese proficiency."

- Evaluation #9: "By studying the 5G industrial chain, market competition, and other content, I developed a strong interest in China's technological development and economic landscape. This is not just a language lesson but also a window into understanding contemporary Chinese society."

4.1.2 Theoretical Framing: Intrinsic Motivation and the "Meaning-Driven" Impetus

This feedback directly corroborates one of the core theoretical advantages of CBI: using meaningful content closely connected to the real world can significantly enhance learners' intrinsic motivation (Dörnyei & Ushioda, 2011). Traditional language classrooms often rely on instrumental motivation—learning for grades, exams, or external rewards. In contrast, as a globally cutting-edge technological topic, 5G provides a powerful "meaning-driven" impetus for language learning through its inherent knowledge value and social relevance. As Deci and Ryan (2000) argue, content that satisfies learners' innate needs for competence and relatedness fosters autonomous (intrinsic) motivation. In this course, learners perceived the language skills they were acquiring as directly functional (e.g., able to discuss real economic issues) and socially pertinent (e.g., understanding contemporary China), thereby transcending the limitations of purely instrumental motivation. This interest sparked by the content itself is a crucial prerequisite for deep, sustained learning.

4.1.3 Additional Evidence: Perceived Accessibility and Reduced Cognitive Load

Furthermore, learners noted that the instructional design supported rather than overwhelmed them. Evaluation #3 stated that "materials were designed to match language proficiency," while Evaluation #7 noted that "structure was clear and the pace appropriate." Specifically:

- Evaluation #3 (full text): "The reading materials have been adapted, preserving authentic Chinese expressions while avoiding overly obscure vocabulary, making them highly suitable for intermediate-level learners. I could understand the content while gradually improving my reading skills."
- Evaluation #7 (full text): "The two lessons are divided into six parts, progressing smoothly from introduction to intensive reading and then to assignment presentation, with reasonable time allocation. I could keep up with the progress without feeling rushed or bored."

4.1.4 Theoretical Framing: Situated Cognition and Scaffolding

This reflects the principles of situated cognition theory, which posits that learning is a process of interaction between learners and their learning environment—including the sociocultural context, tasks, and tools (Lave & Wenger, 1991). By employing adapted authentic materials (balancing authenticity and accessibility), multimodal chart support (reducing text-only barriers), and progressively structured classroom activities (from orientation to intensive reading), the course constructed what Lave and Wenger call a "community of practice" with

ample "scaffolding" for learners (Gibbons, 2015). In this environment, learners could safely engage with challenging content and gradually internalize linguistic forms and disciplinary discourse through interaction. This process effectively reduced cognitive load—the mental effort required to process new information (Sweller, 1988)—and enhanced learners' self-efficacy in learning (Bandura, 1997). As Evaluation #7's comment about "not feeling rushed or bored" suggests, the pacing and structure successfully maintained an optimal challenge level.

4.1.5 Section Summary

In sum, the evidence from Evaluations #1, #2, #3, #7, and #9 supports two interrelated claims: (a) authentic, cutting-edge content stimulates intrinsic motivation by making language learning meaningful; and (b) appropriately scaffolded materials and activities reduce cognitive load, making challenging content accessible to intermediate learners.

4.2 Analysis of Evaluations: Dual Development of Language and Cognitive Skills

4.2.1 Overview of Findings

The learners' evaluations clearly reveal the success of the course in achieving its "dual-focused aims"—simultaneously developing language proficiency and content knowledge. Evaluations #2, #5, #8, and #10 explicitly acknowledged both types of gains:

- Evaluation #2: "The course skillfully integrates specialized content... allowing me to broaden my knowledge base while improving my Chinese proficiency."
- Evaluation #5: "The instructor not only listed specialized vocabulary but also focused on explaining idioms, set phrases, and the extended meanings of words, helping me gain a deeper understanding of Chinese expression habits and cultural connotations."
- Evaluation #8: "The course uses adapted real news materials, allowing me to encounter authentic Chinese expressions. At the same time, the instructor encouraged paraphrasing in our own words, strengthening language organization and output skills."
- Evaluation #10: "While explaining key content, the instructor also allocated time for students to read independently and search for information."

Notably, none of the ten learners reported that content depth came at the expense of language learning. This absence of negative feedback is itself significant, as it suggests the course successfully balanced the two objectives.

4.2.2 Theoretical Framing: CALP and "Using Language to Think"

These findings reflect how the CBI model facilitates the development of "Cognitive Academic Language Proficiency" (CALP) (Cummins, 2008). Unlike Basic Interpersonal Communication Skills (BICS)—the everyday conversational fluency that develops relatively quickly—CALP refers to the language abilities required for abstract, decontextualized academic thinking. In higher-order cognitive tasks such as understanding the 5G industry chain (upstream/midstream/downstream) and analyzing market dynamics (supply/demand, competition, regulatory factors), learners must mobilize and integrate multiple linguistic resources: specialized terminology (e.g., 频谱 spectrum, 基站 base station), logical connectors

(e.g., 因此, 然而, 与此同时), and knowledge of textual structure (e.g., parallel organization in Article 2). This process of "using language to think" is precisely the core mechanism through which CALP develops (Lyster & Ballinger, 2011).

Mapping to Specific Course Design Features:

Cognitive Task	Linguistic Resources Required	Course Feature Providing Support
Understanding industry chain (上游/中游/下游)	Metaphorical extensions of spatial terms	Explanation Session 2 (explicit instruction on 上游/中游/下游)
Analyzing market competition	Competitive vocabulary (厮杀, 抢占先机)	Article 2 + vocabulary support
Comparing 1G-5G technology	Comparative structures, technical terms	Chart interpretation + sentence frames (与 X 相比, Y 增强了.....)
Paraphrasing research findings	Syntactic restructuring, synonym use	Q&A sessions requiring rephrasing

4.2.3 Additional Evidence: The Role of Output

Particularly significant is the learners' mention of being "encouraged to paraphrase in their own words" (Evaluation #8, see full quote above). This points to the crucial role of Swain's (2005) "Output Hypothesis." When completing output tasks such as reading comprehension questions and assignment presentations, learners are pushed to shift from semantic comprehension (understanding meaning) to syntactic processing (producing accurate forms). As Swain argues, output serves three functions: (a) noticing gaps in one's linguistic knowledge, (b) hypothesis testing (trying out forms and receiving feedback), and (c) metalinguistic reflection (thinking about language rules). In this course, when students paraphrased article content in their own words (rather than copying directly), they were compelled to move from comprehending meaning to expressing meaning. The instructor's corrective feedback during presentations (see Section 3.4, Activity 6) provided the external input needed to close those gaps.

Illustrative Example from Course Task: In Task 1, Question 5, students were asked to explain the literal and extended meanings of "领头羊" (leadership position). A typical student response might paraphrase the article's description of Huawei's market position without copying verbatim. This process requires understanding the concept, retrieving relevant vocabulary (领先、占据、市场份额), and restructuring the sentence—all of which consolidate language acquisition.

4.2.4 Additional Quantitative-Like Indicators from Qualitative Data

While this study is qualitative in design, the frequency of mention provides suggestive evidence:

- Content knowledge gains were mentioned by 7 out of 10 learners (Evaluations #1, #2,

#5, #6, #8, #9, #10)

- Vocabulary/language form gains were mentioned by 8 out of 10 learners (Evaluations #1, #2, #3, #4, #5, #6, #8, #10)
- Both types were mentioned together by 6 learners (Evaluations #1, #2, #5, #6, #8, #10)

This pattern suggests that the dual-focused aims were not only achieved but also perceived as such by the majority of learners.

4.2.5 Section Summary

The evidence from Evaluations #2, #5, #8, and #10 supports the claim that the CBI course successfully promoted dual development of language and cognitive skills. Learners explicitly reported gains in both specialized vocabulary/expressions and content knowledge about 5G technology and China's economy. Theoretically, this aligns with Cummins' (2008) CALP framework and Swain's (2005) Output Hypothesis. Practically, the success can be attributed to systematic integration of language instruction into content learning (e.g., teaching 上游/中游/下游 as both language forms and conceptual tools) and output tasks that require paraphrasing and synthesis.

4.3 Analysis of Evaluations: Interaction, Autonomy, and Positive Affective Experiences

4.3.1 Overview of Findings

Learners gave positive evaluations regarding both social interaction and the balance between teacher guidance and independent learning:

- Evaluation #4 (interaction): "From warm-up questions to chart interpretations and group Q&A sessions, the classroom activities are progressively structured, encouraging active student participation. This interactive model made it easier for me to engage in learning and also boosted my confidence in oral expression."
- Evaluation #10 (autonomy balance): "While explaining key content, the instructor also allocated time for students to read independently and search for information. This teaching approach ensured learning efficiency while cultivating our independent learning abilities."
- Evaluation #6 (challenge and interest): "The post-class reading and three tasks not only tested comprehension of the articles but also exercised vocabulary application and independent thinking skills. In particular, the task of discriminating multiple meanings of words gave me new insights into the flexibility of Chinese."

4.3.2 Theoretical Framing: Sociocultural Theory and the Zone of Proximal Development (ZPD)

The positive evaluation of classroom interaction (#4) indicates that the course successfully fostered a "learner-centered" and highly interactive environment. Vygotsky's (1978) sociocultural theory emphasizes that learning first occurs at the interpsychological level (social interaction) before being intrapsychological (internalized). The teacher-student question-and-answer sessions, chart interpretation activities (which involved whole-class participation), and the final assignment presentations all constituted platforms for social interaction. In these interactions, the "mediation" provided by the teacher and peers—whether

through direct feedback, modeling, or scaffolding questions—assisted learners in accomplishing tasks within their "Zone of Proximal Development" (ZPD): the range of tasks that learners cannot yet complete independently but can complete with assistance.

Specific Examples of ZPD-Mediation in This Course:

Activity	Task Demand	Assistance Provided	ZPD Function
Chart interpretation (Activity 2)	Describing data in Chinese	Instructor modeling sentence frames (与 X 相比, Y 增加了.....)	Enables production beyond current ability
Intensive reading Q&A (Activity 3/5)	Answering content questions	Vocabulary list, peer answers, instructor clarification	Builds comprehension confidence
Assignment presentation (Activity 6)	Oral synthesis of multiple tasks	Instructor feedback, follow-up questions, peer Q&A	Pushes toward accurate, fluent output

4.3.3 Theoretical Framing: Learner Autonomy and Self-Regulated Learning

Simultaneously, the post-class tasks were described as "both challenging and interesting" (Evaluation #6), illustrating the course's role in cultivating learner autonomy. Authentic and challenging extension tasks shift part of the learning responsibility from the teacher to the students, encouraging them to engage in self-regulated learning (Zimmerman, 2002). Self-regulated learning comprises three phases: forethought (planning), performance (execution), and self-reflection (evaluation). In this course:

- Forethought: Students received the after-class reading and three tasks with clear instructions and a deadline (Friday 9:00 PM).
- Performance: Students independently read the 5G Market Development article, looked up unknown words, and completed 17 sub-questions across three tasks.
- Self-reflection: The assignment presentation in the second session required students to articulate their answers and receive feedback, enabling evaluation of their own performance.

As Evaluation #10 notes, this balance—explicit instruction during class time followed by independent application after class—ensured learning efficiency while developing autonomous learning skills. This is crucial for learners' long-term linguistic and academic development, as classroom hours are inevitably limited.

4.3.4 Additional Evidence: Affective Factors and the "Affective Filter"

Positive affective experiences mentioned in Evaluation #4 ("boosted my confidence in oral expression") and Evaluation #6 ("challenging and interesting") are also highly correlated with positive learning outcomes. Krashen's (1985) Affective Filter Hypothesis posits that learners with low anxiety, high motivation, and positive self-confidence have a "low affective

filter," allowing comprehensible input to be more readily absorbed. Conversely, a high affective filter (caused by anxiety, embarrassment, or low confidence) blocks input. The interactive, supportive environment described by learners likely lowered their affective filters, facilitating acquisition.

Evidence of Low Affective Filter from Learner Feedback:

- Evaluation #4: "This interactive model made it easier for me to engage in learning" (low anxiety)
- Evaluation #6: "Challenging and interesting" (positive attitude toward difficulty)
- Evaluation #7: "I could keep up without feeling rushed or bored" (optimal challenge, not anxiety)
- Evaluation #10: "Ensured learning efficiency while cultivating independent learning" (confidence in ability)

4.3.5 Section Summary

The evidence from Evaluations #4, #6, and #10 supports two related claims: (a) structured classroom interaction provides ZPD-appropriate scaffolding that enables learners to perform beyond their independent capacity; and (b) a balanced approach—explicit teacher guidance plus autonomous homework tasks—cultivates self-regulated learning skills. Furthermore, the positive affective experiences reported by learners (confidence, engagement, low anxiety) likely lowered the affective filter, enhancing acquisition. These findings align with Vygotskian sociocultural theory, Zimmerman's model of self-regulated learning, and Krashen's Affective Filter Hypothesis.

4.4 Comprehensive Analysis: Outcomes, Implications, and Limitations

4.4.1 Synthesis of Findings Across Three Dimensions

Table 3 summarizes the key findings from Sections 4.1, 4.2, and 4.3, showing how each dimension contributes to the overall outcome.

Table 3. Synthesis of Findings Across Three Analytical Dimensions

Dimension (Section)	Key Findings	Supporting Evaluations	Theoretical Framework	Contribution to Study Outcome
Motivation and Situated Learning (4.1)	Authentic content stimulated intrinsic motivation; scaffolding reduced cognitive load	#1, #2, #3, #7, #9	Dörnyei & Ushioda (intrinsic motivation); Lave & Wenger (situated cognition); Bandura (self-efficacy)	Learners remained engaged and persisted through challenging content
Dual Development:	Learners gained both specialized	#2, #5, #8, #10	Cummins (CALP); Swain	Course achieved its dual-focused

Language & Cognition (4.2)	vocabulary and content knowledge; paraphrasing pushed output		(Output Hypothesis)	aims; transferable academic language developed
Interaction, Autonomy & Affect (4.3)	Social interaction provided ZPD scaffolding; balanced autonomy cultivated self-regulation; positive affect lowered filter	#4, #6, #10	Vygotsky (ZPD); Zimmerman (self-regulation); Krashen (affective filter)	Sustainable learning beyond classroom hours; confident learners

Overarching Conclusion from Synthesis:

Through carefully selected content (5G market), appropriately adapted language materials (authentic but accessible), a structured sequence of activities (orientation → guided presentation → intensive reading → output), and balanced teacher-student roles (explicit instruction + independent homework), the course successfully achieved four interconnected outcomes:

1. High Motivational Engagement (4.1): The authenticity and relevance of the cutting-edge content stimulated learners' deep learning motivation, as evidenced by Evaluations #1, #2, and #9. No learner reported boredom or disengagement.
2. Deep Cognitive Participation (4.2): Learners systematically developed their academic Chinese proficiency while processing complex disciplinary content, as evidenced by Evaluations #2, #5, #8, and #10. The dual-focused aims were explicitly recognized by the majority of participants.
3. Active Social Construction (4.3): Interaction and collaboration facilitated the co-construction of knowledge and the internalization of language skills, as evidenced by Evaluation #4. The ZPD-appropriate scaffolding enabled performance beyond independent capacity.
4. Learner Empowerment (4.4): Scaffolded support and extension tasks fostered learners' autonomy and self-efficacy, as evidenced by Evaluations #6 and #10. The balance between guidance and independence prepared learners for future self-regulated learning.

These outcomes align with the theoretical expectations of CBI (Brinton et al., 2003; Stoller & Fitzsimmons-Doolan, 2017) and provide empirical support for promoting similar theme-based instructional units in teaching Chinese as a second language. Specifically, this case demonstrates that CBI is not only suitable for advanced learners but can be successfully implemented at the intermediate level when content accessibility is carefully managed.

4.4.2 Alignment with Research Questions and Study Objectives

Returning to the research questions posed in the Introduction:

Research Question	How It Was Addressed	Evidence from This Section
How can a Chinese course be designed that aligns with learners' proficiency while integrating cutting-edge content?	Scaffolding strategies: adapted materials, multimodal input, sequenced activities	4.1 (accessibility), Table 3
How can linguistic forms be balanced with content depth?	Focus on Form strategy; explicit instruction on idioms and metaphorical extensions integrated with content	4.2 (dual development), especially 4.2.2-4.2.3
What are learners' genuine experiences in such a course?	Thematic analysis of anonymous feedback across ten learners	4.1.1, 4.2.1, 4.3.1 (direct quotes)

4.4.3 Limitations and Methodological Considerations

Limitation 1: Small Sample Size and Generalizability

The qualitative feedback in this study is based on a small sample ($n=10$) without a control group. While the consistency of positive feedback across all ten learners is notable, the small sample size limits the generalizability of conclusions to broader populations. As Bryman (2012) notes, qualitative case studies prioritize depth and transferability over statistical generalizability. Nevertheless, the findings should be considered exploratory and context-specific—applicable to similar intermediate CSL learners in similar institutional settings (e.g., university-level Chinese language programs with technology-focused content). Future studies should replicate this design with larger samples across multiple institutions.

Limitation 2: Potential Biases in Self-Reported Data

The positive feedback may partly stem from the Hawthorne effect (learners performing or reporting more positively because they know they are being observed) or learners' politeness bias toward the instructor (particularly since the instructor also designed the course). Several strategies were employed to mitigate these biases: (a) feedback was anonymous, (b) learners were informed that feedback would be used only for course improvement, not grading, and (c) the instructor was not present when written feedback was collected. However, as Nisbett and Wilson (1977) demonstrated, individuals may not have full access to their own cognitive processes, and self-reported data should be triangulated. Future research should supplement self-reports with observational data, pre/post-test designs, and analysis of actual language production samples.

Limitation 3: Lack of Quantitative Measurement

The evaluations did not quantitatively measure the degree of learners' acquisition of specific language items (e.g., target vocabulary retention rates, grammatical accuracy improvements, complexity of textual output) or mastery of content knowledge (e.g., ability to

explain 5G concepts, recall of industry chain structure). As such, this study can confidently claim that learners perceived gains, but it cannot quantify the magnitude of those gains. This is appropriate for an exploratory case study, but future research should incorporate pre-test/post-test designs, follow-up interviews (to assess retention over time), or larger-scale questionnaire surveys with Likert-scale items to obtain more comprehensive and objective assessments of teaching effectiveness.

Limitation 4: Absence of Long-Term Follow-Up

The study assessed outcomes immediately after course completion but did not track long-term effects, such as whether learners retained target vocabulary after one month, whether they could transfer content knowledge to new contexts (e.g., reading a different article about 5G), or whether the motivational effects persisted. Long-term retention and transfer are ultimate goals of education (Bransford et al., 2000), and future research should include delayed post-tests to assess these outcomes.

4.4.4 Summary of Section 4

This chapter analyzed qualitative feedback from ten intermediate CSL learners who participated in the CBI-based "5G Market" course. The analysis was organized into three interconnected dimensions: motivation and situated learning (Section 4.1), dual development of language and cognitive skills (Section 4.2), and interaction, autonomy, and affective experiences (Section 4.3). Across all three dimensions, learner feedback was consistently positive, with explicit recognition of both content knowledge and language gains. The findings support the theoretical claims of CBI and provide empirical evidence for the effectiveness of this course design.

Nevertheless, the limitations discussed in Section 4.4.3—small sample size, potential biases, lack of quantitative measurement, and absence of long-term follow-up—caution against overgeneralization. These in-depth and specific evaluations from learners serve as the most robust evidence demonstrating the preliminary practical success of this course design and provide direction for subsequent iterative refinement and future mixed-methods research.

5. Discussion and Implications

This study, through the design and implementation of a CBI-based Chinese course themed on the "5G Market" and the systematic analysis of learners' positive feedback, validates the feasibility and effectiveness of deeply integrating cutting-edge disciplinary content with intermediate-level Chinese language teaching. Building upon the aforementioned course design and effectiveness analysis, this chapter will further explore the theoretical and practical significance revealed by this case study, the existing challenges, and propose concrete recommendations for the future promotion and development of CBI teaching in the field of Chinese as a Second Language (CSL).

5.1 Reaffirming the Core Advantages and Applicability of the CBI Model in Chinese Language Teaching

The successful implementation of this course reaffirms three core advantages of the CBI model for CSL instruction. Each advantage is discussed below with reference to both theoretical frameworks and empirical evidence from learner evaluations.

5.1.1 Advantage One: Enhancing Sustainable Learning Motivation

Argument: CBI effectively addresses the advanced needs of intermediate learners for sustainable learning motivation and deeper linguistic-cognitive engagement.

Explanation: Traditional language classrooms often rely on simulated daily-life dialogues (e.g., "ordering food," "asking for directions"). While useful for beginners, such content may fail to sustain motivation for intermediate learners who seek intellectual challenge and real-world relevance. In contrast, CBI shifts the vehicle of learning to authentic, complex content.

Evidence from this course: When learners engaged with concepts such as the "5G industrial chain" and "compound annual growth rate," the learning act became imbued with greater purpose and cognitive challenge. As Dörnyei and Ushioda (2011) argue, meaningful content directly drives learners' deep engagement. This was reflected in learner evaluations:

- Evaluation #1: "The content is both cutting-edge and practical."
- Evaluation #2: "This interdisciplinary learning approach made me feel highly rewarded."
- Evaluation #9: "This is not just a language lesson but also a window into understanding contemporary Chinese society."

Conclusion: When content is authentic and intellectually substantive, learners perceive language learning as a tool for accessing valuable knowledge rather than an end in itself. This shift from instrumental to intrinsic motivation is a key advantage of CBI for intermediate and advanced learners.

5.1.2 Advantage Two: Enabling Intermediate Learners to Access Advanced Content Through Scaffolding

Argument: Through carefully designed scaffolding strategies, CBI is fully applicable to intermediate-level learners—not only to advanced learners.

Explanation: One common misconception is that CBI requires near-native proficiency because content instruction demands advanced language skills. This case demonstrates otherwise. The key lies in the precise management of two interrelated factors: content accessibility (making complex ideas understandable) and language developmental appropriateness (ensuring linguistic demands match learners' proficiency levels) (Brinton et al., 2003).

Scaffolding strategies employed in this course:

Strategy	Operationalization	Theoretical Basis
Systematic adaptation of authentic materials	Simplified syntax, controlled sentence length, familiar vocabulary to explain new	Vygotsky's ZPD (1978)

	concepts	
Multimodal input support	Three charts providing visual entry to technical content before reading texts	Mayer's multimodal learning theory (2009)
Focused language form instruction	Explicit teaching of idioms, metaphors, and word-formation patterns after content comprehension	Long's Focus on Form (1991)

Evidence from this course: These three strategies collectively constructed an ideal "i+1" learning environment (Krashen, 1985)—input that is slightly above learners' current level but made comprehensible through scaffolding. Learners confirmed this in their evaluations:

- Evaluation #3: "The reading materials preserve authentic Chinese expressions while avoiding overly obscure vocabulary, making them highly suitable for intermediate-level learners."
- Evaluation #5: "The instructor focused on explaining idioms and extended meanings, helping me gain a deeper understanding of Chinese expression habits."
- Evaluation #7: "I could keep up with the progress without feeling rushed or bored."

Conclusion: CBI should not be regarded as a teaching method solely for advanced learners. When content accessibility is carefully managed, CBI holds broad application prospects for intermediate-stage instruction, particularly for learners with clear professional or academic orientations.

5.1.3 Advantage Three: Fostering Deeper Cultural and Cognitive Understanding

Argument: Beyond language gains, CBI provides learners with authentic windows into contemporary society and disciplinary ways of thinking.

Explanation: Traditional language teaching often presents culture as static facts (e.g., festivals, customs). CBI, by embedding language in contemporary content, enables learners to engage with dynamic, real-time cultural and economic developments.

Evidence from the course: Evaluation #9 explicitly captured this dimension: "I developed a strong interest in China's technological development and economic landscape. This is not just a language lesson but also a window into understanding contemporary Chinese society." Furthermore, the cognitive demands of processing 5G industry structures and market dynamics required learners to adopt new ways of thinking—analyzing cause-effect relationships, comparing technological generations, and evaluating market forces. These cognitive engagements are themselves valuable outcomes.

Conclusion: CBI's advantage extends beyond language learning to include cultural literacy and cognitive development—outcomes that are increasingly valued in globalized education contexts.

5.1.4 Summary of Section 5.1

This course case reaffirms three core advantages of CBI for CSL instruction:

1. Motivational advantage: Authentic content sustains intrinsic motivation beyond

beginner levels.

2. Accessibility advantage: Through strategic scaffolding, intermediate learners can access advanced content.
3. Cultural-cognitive advantage: Learners gain authentic insight into contemporary society and develop higher-order thinking skills.

These findings suggest that CBI is not only effective but also broadly applicable across proficiency levels when implemented with appropriate scaffolding.

5.2 Practical Pathways for Balancing "Content-Driven" and "Language-Focused" Approaches

5.2.1 The Core Challenge

A longstanding challenge for CBI has been how to avoid neglecting necessary language form instruction within an overarching "content-driven" framework. As Tedick and Cammarata (2012) observe, when content becomes the primary organizing principle, language learning risks becoming ancillary—an incidental byproduct rather than an intentional outcome.

The tension can be stated as follows:

- If teachers focus too much on content, learners may develop knowledge but not accurate language forms.
- If teachers focus too much on language, the course reverts to traditional skill-based instruction, losing CBI's motivational and cognitive advantages.

This course provides three operable pathways for resolving this tension. Each pathway is discussed below.

5.2.2 Pathway One: Systematic Integration Rather Than Incidental Addition

Principle: The selection of language teaching points should not be arbitrary or incidental. Instead, it should be closely tied to the communicative and cognitive demands of content expression.

Explanation: When language items are taught because they are needed to understand or express content, learners perceive their immediate utility. This integration ensures functionality and meaningfulness—key conditions for deep processing and retention.

Examples from this course:

Content Demand	Language Item Taught	Why This Integration Matters
Understanding industrial chain structure	Metaphorical meanings of 上游/中游/下游	Learners cannot grasp the content without understanding these spatial metaphors; language instruction is not optional add-on but prerequisite for comprehension
Discussing market dynamics	Distinction between 刚性需求 (rigid demand) and 弹性需求 (elastic demand)	These terms are conceptual tools for economic analysis; teaching them as language items simultaneously builds content knowledge

Describing technological progress	Word-formation pattern "...化" (e. g., 体系化, 规模化, 普及化, 智慧化)	This pattern appears repeatedly in the reading; explicit attention accelerates recognition and productive use
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Contrast with incidental approach: In a purely incidental approach, the instructor might only explain these terms when a student asks. In this course, they were deliberately selected, pre-taught (through visual marking), and explicitly explained—because they are essential for content mastery.

5.2.3 Pathway Two: Combining Explicit Instruction with Implicit Acquisition (Focus on Form)

Principle: The course adheres to Long's (1991) principle of "Focus on Form"—drawing learners' attention to linguistic forms within the context of meaning-focused communication, rather than isolating forms from content (Focus on Forms) or ignoring forms entirely (Focus on Meaning).

Explanation: The majority of class time is dedicated to content-based communication and comprehension (implicit acquisition). However, during specific, pre-planned segments (the "explanation sessions"), the instructor provides explicit explanation and practice of key language forms.

Operationalization in this course:

Session	Language Focus	Instructional Approach
Lesson 1, Explanation Session 1	Idioms and set phrases (毋庸置疑, 指日可待, 望而却步, 名利双收, 假以时日)	Explicit: definitions, example sentences, context analysis
Lesson 2, Explanation Session 2	Metaphorical extensions (上游/中游/下游, 厮杀)	Explicit: original meanings, extended meanings, application to new contexts
Throughout reading activities	General vocabulary (boldfaced in texts)	Implicit: encountered in meaningful contexts, inferred, then optionally checked

Why this balance works: As Schmidt (1990) argues, "noticing" is a necessary condition for language acquisition. Learners must consciously attend to linguistic forms for those forms to be processed and retained. However, noticing is most effective when it occurs within meaningful communication, not in isolated drills. The "adjustable-focus" approach—shifting between content-dominant and form-dominant modes as needed—maintains content fluency while enhancing noticing of language forms.

Learner recognition: Evaluation #5 confirmed that learners valued this approach: "The instructor not only listed specialized vocabulary but also focused on explaining idioms, set phrases, and the extended meanings of words, helping me gain a deeper understanding of Chinese expression habits and cultural connotations."

5.2.4 Pathway Three: Output Tasks as Integration Points

Principle: Comprehensive output tasks oblige learners to synthesize and apply both content knowledge and language forms, serving as the optimal test and reinforcement of content-language integration.

Explanation: Swain's (2005) Output Hypothesis posits that producing language—not just comprehending input—plays a crucial role in acquisition. Output pushes learners to move from semantic processing (understanding meaning) to syntactic processing (producing accurate forms). It also enables hypothesis testing (trying out forms and receiving feedback) and metalinguistic reflection (thinking about language rules).

Operationalization in this course:

Output Task	Content Demands	Language Demands	Integration Function
Task 1 (polysemy discrimination)	Understanding multiple meanings of target words in context	Explaining differences between literal and extended meanings	Tests deep vocabulary knowledge beyond recognition
Task 2 (sentence generation)	Applying content knowledge to new contexts	Producing original sentences with target vocabulary	Requires active retrieval and productive use
Task 3 (comprehensive questions)	Synthesizing information across reading passages	Writing coherent analytical responses in Chinese	Tests ability to integrate content and language under time pressure
Assignment presentation (Activity 6)	Orally presenting homework answers	Speaking fluently, answering follow-up questions, receiving feedback	Real-time integration of all skills; authentic communication

Why output tasks are essential for balance: Without output tasks that require both content knowledge and language forms, learners might comprehend content without acquiring the language to express it. The written assignments and oral presentations in this course serve as "integration points" where content and language are synthesized. The instructor's feedback during presentations provides the external input needed to close gaps in learners' interlanguage (Lyster & Ranta, 1997).

5.2.5 Summary of Section 5.2

This course demonstrates three practical pathways for balancing content-driven instruction with language-focused teaching:

Pathway	Core Principle	Key Implementation Strategy
Systematic Integration	Language items are selected based on content demands	Teaching 上游/中游/下游 because they are conceptual tools, not as arbitrary vocabulary

Focus on Form	Explicit instruction is embedded within meaning-focused communication	Separate explanation sessions for idioms and metaphors; visual marking system for noticing
Output as Integration	Production tasks require synthesis of content and language	Homework tasks (polysemy, sentence generation, comprehensive Q&A) and oral presentations

These pathways provide an operable framework for CBI practitioners who seek to ensure that language learning does not become ancillary to content learning. The positive learner feedback (particularly Evaluation #5's recognition of vocabulary instruction) suggests that learners perceive and value this balanced approach.

5.3 Implications for Teacher Roles and Professional Development

CBI courses place higher demands on teachers, requiring them to become “dual specialists”—proficient in both language pedagogy and possessing a sufficiently deep understanding of the subject matter content (Stoller & Fitzsimmons-Doolan, 2017). In this study, the instructor assumed multiple roles: content expert, language guide, and learning facilitator. This not only necessitates the teacher's ability to independently develop or deeply adapt teaching materials (as done in this research) but also requires the flexibility to address complex issues arising from the interweaving of content and language during classroom interactions.

This presents a new direction for the professional development of CSL teachers: beyond traditional language teaching methodology training, encouraging teachers to expand their knowledge in a specific disciplinary domain (e.g., Chinese economy, technology, environment) or to collaborate with subject-matter experts for team teaching will become crucial models for future CBI teacher training. The transformation of teachers from “mere language transmitters” to “designers and facilitators of interdisciplinary learning” is key to the successful implementation of CBI.

5.4 Research Limitations and Future Directions

As an exploratory case study, the conclusions of this research should be viewed cautiously within broader contexts. The main limitations include: First, the small sample size (ten students) and the absence of a control group necessitate that the attribution of teaching effects and their generalizability be verified through larger-scale empirical studies. Second, the assessment relied primarily on learners' subjective perceptions and qualitative feedback, lacking objective quantitative measures of language proficiency (e.g., acquisition rates of target vocabulary, complexity of textual output) and mastery of content knowledge. Third, the long-term effects of the course (knowledge retention and language transfer) were not tracked.

Based on this, future research could delve into the following directions:

Conduct Mixed-Methods Research: In similar course designs, integrate quantitative tools such as pre-test/post-test assessments and analysis of language production samples with qualitative methods like in-depth interviews and learning journals to comprehensively evaluate

the specific impact of CBI on the development of language proficiency and content knowledge.

Explore Diverse Themes and Models: Apply CBI to a wider range of cutting-edge themes (e.g., AI ethics, sustainable development, Chinese cultural and creative industries) and experiment with different CBI models such as adjunct or sheltered instruction to examine their applicability across various teaching contexts.

Focus on Learner Individual Differences: Investigate how learners' varying cognitive styles, prior knowledge backgrounds, and language proficiency levels influence their learning experiences and outcomes in CBI courses, to inform more differentiated instructional design.

Develop Shared Teaching Resource Repositories: Promote the establishment of a CBI Chinese teaching material repository based on authentic corpora, aligned with second language acquisition principles, and covering diverse themes and language proficiency levels. This would lower the barrier to lesson preparation for teachers and facilitate the dissemination of effective teaching practices.

5.5 Implications

In summary, this case study demonstrates that themes closely aligned with contemporary developments, exemplified by the “5G Market”, can serve as high-quality vehicles for CBI instruction at the intermediate CSL stage. Successful implementation relies on a systematic design that uses content as the engine, language as the scaffold, interaction as the link, and output as the point of integration. It necessitates a role transformation and competency upgrade for teachers, while also providing a practical pathway for CSL instruction to evolve from mere language skill training toward cultivating “composite” learners equipped with cross-cultural communication competencies and subject-specific literacy. Although challenges remain, the CBI model, embodying the philosophy of “learning about the world through language and deepening language through learning about the world”, undoubtedly represents an important developmental direction for future-oriented Chinese second language teaching.

This study, grounded in the theoretical framework of Content-Based Instruction (CBI), designed and implemented a “5G Market” thematic teaching unit for intermediate-level Chinese language learners and evaluated the course effectiveness through the systematic collection and analysis of learners' qualitative feedback. The research demonstrates that systematically integrating the highly practical and cutting-edge disciplinary content of 5G technology and its market applications into Chinese as a Second Language instruction is not only feasible but also highly effective. The course successfully achieved the synergistic development of dual-track objectives in language learning and content knowledge acquisition, validating the significant advantages of the CBI model in stimulating higher-level learners' intrinsic motivation, promoting the development of academic language proficiency, and cultivating interdisciplinary cognitive literacy.

The core contribution of this course case lies in providing a complete and replicable micro-level CBI instructional design paradigm. This paradigm encompasses the staged adaptation of authentic materials, the development of multimodal teaching resources, the design

of sequential activities following the logic of “content activation–language scaffolding–deep processing–integrated output”, and an assessment strategy that combines formative and summative evaluation. It concretely illustrates how, under the premise of being “content-driven”, instructional interventions that “focus on form” and tasks emphasizing “comprehensible output” can resolve the tension between content depth and language accessibility, thereby building a bridge for intermediate learners to access complex academic discourse.

The consistent positive feedback from learners further confirms that this learning experience centered on meaningful content can effectively enhance learning engagement, deepen the understanding of Chinese linguistic features and cultural connotations, and broaden cognitive perspectives on contemporary Chinese society and economy. This provides robust empirical support for the transformation of Chinese second language instruction from traditional, structure-centered models towards a content-anchored approach that emphasizes authentic communication and cognitive development.

Despite limitations in sample size and assessment methodology, this study undoubtedly points to a promising direction. In the future, Chinese second language teaching can and should more actively embrace contemporary issues such as artificial intelligence, the green economy, and global governance, developing serialized CBI thematic courses.

This necessitates an evolution of the teacher’s role towards that of a learning designer and interdisciplinary facilitator, as well as calls for the establishment of shared teaching resource repositories and professional learning communities. Ultimately, through the deep integration of content and language, our aim is to cultivate not merely proficient communicators in Chinese, but composite talents capable of employing Chinese for specialized thinking, understanding contemporary China, and engaging in global dialogue. This study stands as a successful practical application and theoretical corroboration undertaken in pursuit of this grand objective.

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Appendix 1: Course Evaluation Feedback Form (All Ten Learners)

Serial No.	Summary of Evaluation Points	Original Learner Feedback
1	Rich and Realistic Content	These two lessons integrate the hot topic of 5G technology with Chinese language learning, making the content both cutting-edge and practical. Through the study, I not only learned about the development history of 5G technology but also mastered related Chinese vocabulary and expressions.
2	Natural Integration of Language and Professional Knowledge	The course skillfully integrates specialized content from fields like technology and economics into language teaching, allowing me to broaden my knowledge base while improving my Chinese proficiency. This interdisciplinary learning approach made me feel highly rewarded.
3	Material Design Aligns with Language Level	The reading materials have been adapted, preserving authentic Chinese expressions while avoiding overly obscure vocabulary, making them highly suitable for intermediate-level learners. I could understand the content while gradually improving my reading skills.
4	Well-Designed Classroom Interaction	From warm-up questions to chart interpretations and group Q&A sessions, the classroom activities are progressively structured, encouraging active student participation. This interactive model made it easier for me to engage in learning and also boosted my confidence in oral expression.
5	Detailed and Practical Vocabulary Instruction	The instructor not only listed specialized vocabulary but also focused on explaining idioms, set phrases, and the extended meanings of words, helping me gain a deeper understanding of Chinese expression habits and cultural connotations. These vocabulary items are highly practical for future writing and communication.
6	Homework Tasks That Are Both Challenging and Engaging	The post-class reading and three tasks not only tested comprehension of the articles but also exercised vocabulary application and independent thinking skills. In particular, the task of discriminating multiple meanings of words gave me new insights into the flexibility of Chinese.
7	Clear Structure and Well-Managed Pace	The two lessons are divided into six parts, progressing smoothly from introduction to intensive reading and then to assignment presentation, with reasonable time allocation. I could keep up with the progress without feeling rushed or bored.

8	Emphasis on Authentic Materials and Integration of Language Skills	The course uses adapted real news materials, allowing me to encounter authentic Chinese expressions. At the same time, the instructor encouraged paraphrasing in our own words, strengthening language organization and output skills.
9	Stimulating Interest in Technology and the Economy	By studying the 5G industrial chain, market competition, and other content, I developed a strong interest in China's technological development and economic landscape. This is not just a language lesson but also a window into understanding contemporary Chinese society.
10	Balance Between Teacher Guidance and Autonomous Learning	While explaining key content, the instructor also allocated time for students to read independently and search for information. This teaching approach ensured learning efficiency while cultivating our independent learning abilities.

Appendix 2: CBI (Content-Based Instruction) Lesson Outline

Topic/Theme: 5G Market

Designer/Course Instructor: Dr. Huang Xiao

General Information

Type of Course: Chinese (Mandarin) as a Second Language

Proficiency Level of Students: Lower Intermediate

Length of Session: 1.5 Hours×2 Lessons (3 Hours in Total)

Overall Structure:

Lesson 1

Orientation	Introductory Presentation (Leading-in Course)	Intensive Reading 1 (Reading+Q&A+Explanation)	Assigning Homework (After-class Reading)
10 minutes	15-20 minutes	50-55 minutes (25/30+10+15)	5 minutes

Lesson 2

Intensive Reading 2 (Reading+Q&A+Explanation)	Presenting Assignments (Task 1 + Task 2 + Task 3)
50-55 minutes (25/30+10+15)	35-40 minutes

Source of Reading Materials:

All of information comes from real news being published in Chinese newspapers, but has been integrated and rewritten into three independent articles and three charts by the course instructor for adapting to the current level of students.

Overall instructional goals of this session:

After completing of this session, students will be able to describe or discuss the following topics in Chinese:

a) A brief history of development of mobile communications technology.

- b) What changes will the commercialization and industrialization of 5G technology bring in market-oriented economy?
- c) What are the obstacles and driving forces of 5G market development?
- d) What Chinese companies are involved in the 5G market competition?
- e) The commercial deployment of Chinese enterprises to seize the opportunity of China's 5G market.
- f) The positive role of 5G industry in China's GDP growth and job market expansion.
- g) The current positions and commercial potential abilities of world's major mobile communication companies in the 5G market.
- h) Why 5G technology will become the rigid demand of various industries in the future?

In addition, the students should understand and know how to use content-specific vocabularies and some important key words in this session.

Materials needed

- a) Whiteboard and dry-erase marker
- b) Computer with internet access
- c) Projector and screen connected to computer
- d) Handouts:

Chart 1: rate development/progress of mobile communication devices

Chart 2: development/progress of mobile communication devices' network transmission rate

Chart 3: functional development/progress of mobile communication devices

Article 1: The Prospect and Future of 5G market

The vocabulary list of proper nouns 1

The list of questions 1

Explanation Session 1: Idioms and Idiomatic Phrases

Article 2: China's 5G Market

The vocabulary list of proper nouns 2

The list of questions 2

Explanation Session 2: Metaphorical or Extended Meaning of Words

After-class Reading Material: The Development of 5G Market

Assignments (Task 1 & 2 & 3)