

REVIEW

Content-Based Instruction in Language Education: A Bibliometric Review

Lu Zhang^{1,2*} , Hanita Hanim Ismail¹ , Nur Ainil Sulaiman¹ 

¹Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia

²School of English Language & Culture, Xi'an Fanyi University, Xi'an, China

ABSTRACT

The popularization of content-based foreign language programs has given rise to Content-Based Instruction (CBI) as a practical pedagogical approach to facilitating language learning through the medium of content. The growing amount of relevant research in the past decades has necessitated a systematic review of the trends in CBI research to summarize achievements and illuminate future research practices. In this article, CBI-related research articles indexed in Web of Science are reviewed bibliometrically using VOSviewer, following a rigorous selection and screening process. Certain aspects are emphasized, including publication patterns, geographic distribution, institutional contributions, contributing scholars, influential journals and articles, and frequently repeated author keywords. Among the findings, the review highlights substantial geographical variation in previous CBI research as well as the most frequently repeated keywords with corresponding clusters. This review concludes by addressing the research trends in this field and recommending future research directions, which are crucial for understanding the current situation and establishing a foundation for future studies.

Keywords: Content-based instruction; L2; Language education; Bibliometric review

*CORRESPONDING AUTHOR:

Lu Zhang, Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia; Email: p119151@siswa.ukm.edu.my

ARTICLE INFO

Received: 9 July 2024 | Revised: 8 August 2024 | Accepted: 12 August 2024 | Published Online: 12 October 2024

DOI: <https://doi.org/10.30564/fls.v6i4.6845>

CITATION

Zhang, L., Ismail, H.H., Sulaiman, N.A., 2024. Content-Based Instruction in Language Education: A Bibliometric Review. *Forum for Linguistic Studies*. 6(4): 388-403. DOI: <https://doi.org/10.30564/fls.v6i4.6845>

COPYRIGHT

Copyright © 2024 by the author(s). Published by Bilingual Publishing Co. This is an open access article under the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License (<https://creativecommons.org/licenses/by-nc/4.0/>).

1. Introduction

The landscape of foreign/second language (L2) education has undergone significant transformations over the past few decades, driven by the evolving needs of learners and advancements in pedagogical theories. Among the various approaches to L2 teaching, Content-Based Instruction (CBI) has emerged as a prominent method that integrates language learning with subject matter instruction. CBI refers to an approach to L2 teaching “in which teaching is organized around the content or information that students are going to acquire” (Una, 2021, pp. 200-201). It posits that students learn an L2 more effectively when it is used as a medium to acquire new information and skills in various academic or professional fields (Lyster, 2017; Snow & Brinton, 2023). This approach not only enhances linguistic competence but also facilitates cognitive development and content mastery (Nurjannah et al., 2020).

CBI originated from the need to provide learners with meaningful and contextualized language experiences. Unlike traditional language instruction, which often isolates linguistic elements, CBI immerses students in authentic contexts where language use is purposeful and relevant (Suvonova, 2023). This immersion helps learners to develop language skills that are directly applicable to real-world situations, thereby increasing their motivation and engagement (Zairjonovna, 2023). Furthermore, CBI promotes cognitive engagement by challenging learners to use higher-order thinking skills, such as analysis, synthesis, and evaluation, in their L2 practice (Mufaridah & Nurkamilah, 2023; Wright, 2023). By engaging with content that is both linguistically and cognitively demanding, students are more likely to retain information and transfer their L2 skills to new contexts.

Over the years, CBI has been implemented in diverse educational settings, ranging from primary schools to higher education institutions, and across various disciplines (Snow & Brinton, 2023). However, despite its widespread adoption and acknowledged benefits, the body of research on CBI remains fragmented, encompassing a multitude of studies with varying focuses and methodologies. As a result, there is a need to consolidate existing knowledge and provide a comprehensive overview of the field. A bibliometric review, which systematically analyzes academic literature to identify trends, patterns, and influential works (Ahmi,

2022), offers a valuable means to achieve this goal. By examining the publication outputs, citation networks, and thematic developments within CBI research, this review aims to map the intellectual landscape of the field and highlight key areas for future investigation. Particularly, several critical questions will be addressed, transitioning from basic to more advanced aspects of the research field:

- **Publication Patterns:** How has the volume of research on CBI changed over time?
- **Geographic Distribution and Contributions:** Which regions and countries are most active in publishing CBI studies, and what are the patterns of international collaboration in this field?
- **Institutional Contributions:** Which institutions are most active in publishing CBI studies and engaging in research collaboration in the field?
- **Contributing Scholars:** Who are the most prolific and influential authors in CBI research?
- **Influential Journals and Articles:** Which journals publish the most significant amount of CBI research, and which articles are most cited?
- **Frequently Repeated Author Keywords:** What are the common themes and topics identified through frequently repeated author keywords?

By answering these questions, this review seeks to provide a foundation for understanding the current state of CBI research and to inform future studies that can advance the practice of content-based L2 education.

2. Literature review

CBI has its origins in the early 1980s as educators sought innovative ways to enhance language learning through meaningful content (Brinton et al., 1989). The approach emerged from the need to move beyond traditional language instruction methods, which often isolated linguistic elements and failed to engage learners in real-world contexts (Krueger & Ryan, 1993). Over the decades, CBI has evolved, influenced by various educational theories and pedagogical practices, becoming a cornerstone in the field of L2 education.

CBI is grounded in several key educational theories. Second language acquisition theories, particularly Krashen's (1987) Input Hypothesis and Swain's (1985) Output Hy-

pothesis, emphasize the importance of comprehensible input and sufficient output in L2 learning. CBI provides rich and meaningful input and output opportunities through content, facilitating natural L2 acquisition as learners focus on understanding and using the language in context (Snow & Brinton, 2023). Cognitive learning theory highlights the role of cognitive processes in learning (Grippin & Peters, 1984). CBI engages learners in higher-order thinking skills such as analysis, synthesis, and evaluation, promoting deeper cognitive processing and retention of language and content (Lyster, 2017). Vygotsky's (1978) sociocultural theory underscores the importance of social interaction and cultural context in learning. CBI fosters collaborative learning environments where learners engage in meaningful communication and negotiate meaning, enhancing their linguistic and cultural competence (Mufaridah & Nurkamilah, 2023).

The application of CBI is presented in various forms. For example, the theme-based model centers around thematic units where L2 instruction is organized around specific topics or themes (MutiaraniIrpam & RahmanIrpam, 2019; Snow & Brinton, 2023). This approach allows learners to explore a subject deeply while simultaneously developing their language skills, with themes chosen based on their relevance and interest to the learners, enhancing motivation and engagement. Moreover, the adjunct model involves parallel instruction in language and content courses (Snow & Brinton, 2023). Students simultaneously enroll in an L2 course and a content course, with the language course designed to support the content course. The goal is to help students develop the necessary language skills to succeed in the content course. This model fosters close collaboration between language and content instructors, ensuring that language instruction is tailored to the specific demands of the content area (Karim & Ghorbanchian, 2022; Zhang & Hu, 2024). The sheltered model is another type of CBI, which is primarily used in contexts where non-native speakers are integrated into mainstream content courses (Snow & Brinton, 2023). In this model, the content course is adapted to meet the linguistic needs of the learners. Instructors use simplified L2, visual aids, and other strategies to make the content accessible while still challenging learners cognitively. This model is particularly common in secondary and post-secondary education settings where students need to acquire

content knowledge and language skills concurrently (Latif, 2024).

In addition to CBI, various content-based L2 teaching approaches exist. For instance, Content and Language Integrated Learning (CLIL) is a widely used pedagogical approach that involves the simultaneous teaching of subject content and language skills. CLIL emphasizes a dual-focused approach where both language and content are given equal importance, allowing learners to develop linguistic proficiency while gaining knowledge in specific academic areas (Nawrot-Lis, 2020). However, according to Brown and Bradford (2017), CBI differs from CLIL in that it has a strong language-oriented focus, with content learning being peripheral. Another term that can be confused with CBI is English-Medium Instruction (EMI), which refers to the use of English to teach academic subjects in countries where English is not the primary language (H. Hu, 2023). However, unlike CBI, which integrates language instruction within content teaching, EMI often assumes that students already possess sufficient language proficiency to engage with the content, and the primary focus of EMI is on content mastery, with language development being a secondary consideration (Hu & Mi, 2024).

Despite the popularity of various content-based L2 teaching approaches, CBI has gained recognition around the world, adapting to different socio-cultural contexts to meet the diverse needs of learners. In North America, for example, CBI is widely implemented in K-12 education as well as in higher education, often in the form of thematic units that integrate language learning with subjects such as science, history, and social studies (Lyster, 2017). These programs aim to enhance language proficiency while fostering academic success and critical thinking skills. Latin American countries have also embraced CBI to address the growing demand for bilingual education. In countries such as Colombia and Mexico, bilingual schools use CBI to teach English through subjects such as mathematics, science, and social studies (Zarobe & Banegas, 2024). These programs aim to provide students with the language skills needed for higher education and international opportunities while ensuring they do not fall behind in their content knowledge.

In Asia, CBI has been mostly incorporated into English language programs to improve both language proficiency and content knowledge. For example, CBI has been

mostly used in universities to teach subjects such as business, engineering, and information technology in English (Wright, 2023). This approach not only helps students improve their English skills but also prepares them for participation in the global workforce, where English proficiency is often essential. Similarly, in the Middle East, CBI has been adopted in the efforts to improve English language education. Universities in these countries often use CBI to teach subjects such as engineering, medicine, and business to help students develop the language skills necessary for academic success and career advancement in an increasingly globalized world (Hu et al., 2023; Latif, 2024; Mufaridah & Nurkamilah, 2023).

The application of CBI around the world demonstrates its versatility and effectiveness in diverse educational contexts, with previous research confirming its benefits, such as enhanced language proficiency (Suvonova, 2023), increased student motivation and engagement (Zairjonovna, 2023), improved critical thinking and problem-solving skills (Nurjannah et al., 2020), better retention of content knowledge (Punzalan, 2023), greater cultural awareness and sensitivity (Mufaridah & Nurkamilah, 2023), and the development of higher-order cognitive skills (Sun, 2023). However, as CBI gains recognition, a comprehensive understanding of its research output is missing in academia. Previous reviews on content-based L2 programs are mostly systematic reviews, focusing on specific aspects of implementation. For example, Hu et al.'s (2022) systematic review focused on the implementation of content-based programs in China; Richter's (2021) work emphasized content-based learning outcomes in multilingual schools in Europe; and Lailiyah's (2016) systematic review narrowed the scope to content-based English language teaching. These reviews, though thoughtful, may seem less comprehensive than a bibliometric review, which aims to provide a broader and more integrative analysis of the entire body of literature (Ahmi, 2022). This gap necessitates a comprehensive understanding of the patterns and trends of CBI research, thereby providing insights for an informed research agenda that can address existing gaps, guide future investigations, and refine instructional practices.

3. Methodology

3.1 Bibliometric analysis and VOSviewer

Bibliometric analysis is a quantitative research method that examines patterns of publication, citation and collaboration within a specific field of study, which provides valuable insights into the development of knowledge, the flow of ideas and the influence of researchers and publications (Ahmi, 2022). In recent years, the utilization of bibliometric tools and software has gained significant traction in the academic community, facilitating the exploration of large-scale scholarly datasets and enabling researchers to uncover hidden patterns and trends. Among these tools, VOSviewer has emerged as a powerful software program for visualizing and analyzing bibliometric networks. It allows the identification of key patterns, trends and clusters within complex bibliometric networks, incorporates advanced metrics and algorithms to assess the importance and influence of individual entities within the network, and supports temporal analysis to explore the evolution of research trends over time (van Eck & Waltman, 2010). In the field of education and L2 research, VOSviewer has been widely used tool to assist in analyzing research hotspots and providing insights from a range of perspectives (Hidayati, 2023).

3.2 Scope and data source

This systematic review was grounded on the Web of Science (WoS) database, which was considered more comprehensive and credible than other databases commonly used in review analyses (Singh & Dubey, 2021). Before searching for relevant publications, an initial search was conducted in other databases, such as Scopus and Google Scholar, using the keywords CBI and its full name. It was found that, compared with WoS, the number of publications indexed in Scopus was much smaller, and the publications in Google Scholar were more extensive but more miscellaneous. Consequently, as per Öztürk et al.'s (2024) suggestion, WoS was considered more practical in providing manageable and high-quality data for review.

The database was accessed in April 2024 with the institution's permission to search for articles that met the selection criteria. Referring to previous systematic reviews of content-based L2 teaching (e.g., Hu et al., 2023; Lailiyah, 2016; Richter, 2021), the string ("CBI" OR "Content-based Instruction" OR "Content-based Language Teach-

ing” OR “Content-based Language Instruction”) was used with field tags for the title, abstract, and author keywords in WoS. In previous systematic reviews (e.g., Liu, 2019), other keywords such as bilingual education or EMI were used; however, considering the different nature of these concepts, mixing them might lead to imprecise search outcomes. This justified the use of CBI and its counterparts as the sole keywords for the search in this review.

As shown in **Figure 1**, 675 publications were identified with the aforementioned search string. However, only research articles published in journals ($N = 506$) were screened, excluding other types of publications, such as conference papers, reviews, and book chapters ($N = 169$), due to the rule of thumb in analyzing citing evidence from journals instead of other resources (Ahmi, 2022). The publications were then screened by titles, abstracts, and keywords. Consequently, 48 publications were excluded because they did not approach CBI as an L2 teaching approach. The remaining 458 publications were sought for retrieval.

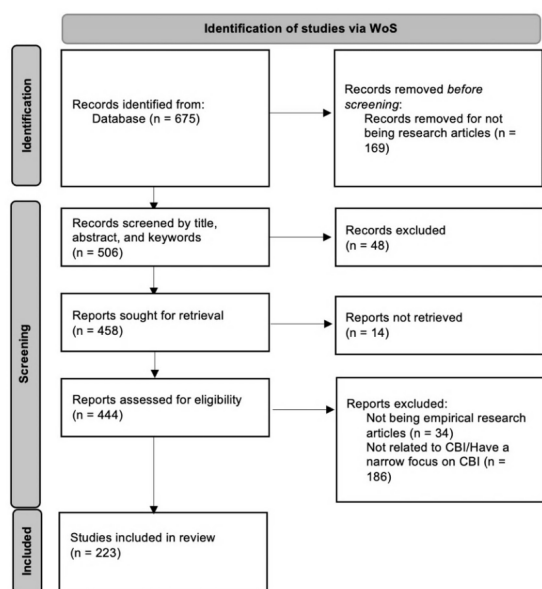


Figure 1. Identification process of CBI-related studies.

Despite 48 records that could not be retrieved, the remaining 444 publications were examined thoroughly for eligibility. As a result, 34 publications were excluded because they were not articles presenting empirical research, and 186 publications were removed because they were not related to CBI or had a very narrow focus on it. During the screening process, all members of the research team independently

screened approximately 50 items for inclusion and exclusion and subsequently met to resolve ambiguities. They then screened an additional 50 items and met to discuss disagreements and consolidate the screening criteria. Consequently, the interrater reliability for the second round of screening of 50 articles was .82 in Fleiss’ kappa, demonstrating acceptable credibility (Cohen, 1960). Ultimately, 223 publications were included in the review because they presented empirical studies about CBI. Given the quality control of WoS (Singh & Dubey, 2021), the academic rigor of the selected publications could be ensured. However, the research team endeavored to examine the quality of these publications, in line with Hu et al.’ s (2022) suggestion that a rigorous study included in a review should principally achieve consistency between research aims/questions and research designs/findings. Consequently, the research team reached a consensus that all the selected publications were rigorous enough for the review. Most of the publications are in English, while other languages are also found to present the main text with English translations of titles and abstracts, including Afrikaans ($N = 1$), Chinese ($N = 2$), French ($N = 2$), Korean ($N = 1$), Portuguese ($N = 1$), and Spanish ($N = 3$).

3.3 Procedure of data analysis

The selected publications were exported from WoS in the form of Excel and computed into VOSviewer for bibliometric analysis. The data analysis aimed to address several key research questions, including publication patterns, geographic distribution and contributions, institutional contributions, contributing scholars, influential journals and articles, and frequently repeated author keywords. A variety of statistics generated in VOSviewer are reported in the article, especially frequency and link of strength. They are particularly useful in understanding the extent of collaboration and the influence of various entities (Ahmi, 2022), highlighting important trends in the CBI research community.

4. Findings

4.1 Publication patterns

Figure 2 presented the number of CBI-related publications per year. The earliest study was conducted by

Snow and Brinton (1988), followed by a few studies (Ballman, 1997; Kennedy et al., 1998; Moeller, 1994; Musumeci, 1996) in the 1990s. This relatively low number of publications indicates the nascent stage of CBI-related research during these years. From 2000 onwards, there is a noticeable increase in the number of publications, peaking at 14 publications in 2008. This decade marks a significant growth phase, suggesting that CBI was gaining more attention and interest within the academic community. The number of publications continues to rise and fall between 2011 and 2019, reaching its highest point in 2015 and 2019 with 18 publications, respectively. This period is characterized by substantial interest and variability in CBI research, reflecting dynamic developments and possibly diverse research focuses and methodologies. A declining trend is evident from 2020 onwards, with the number of publications dropping to 5 in 2023 before a slight increase to 7 in 2024.

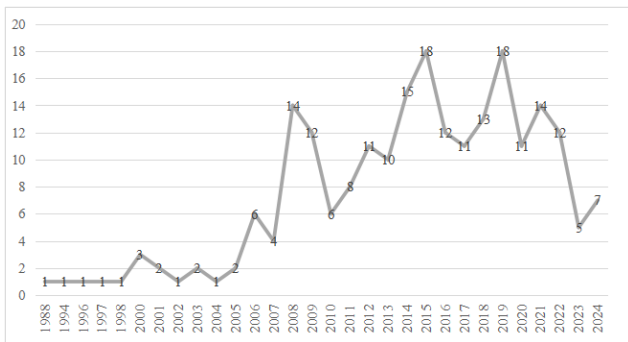


Figure 2. Annual Number of CBI-Related Publications.

4.2 Geographic distribution

Table 1 presents the top ten countries or regions most active in publishing CBI studies. The United States of America (USA) leads with the highest number of documents (80) and citations (1,243), reflecting a significant impact in the research community. Additionally, the USA has the highest total link strength, indicating robust collaborative ties with other countries. Canada follows with 20 documents and a high citation count of 641, showcasing its substantial contribution to research. Its total link strength of 9 further signifies strong international collaboration. The Mainland China has a moderate number of documents (24) and citations (224), with a total link strength of 4, suggesting a growing but still developing presence in global research collaborations. Vietnam, Australia, Colombia, Japan, Spain, and

Turkey each have a smaller number of documents, ranging from 4 to 16, with varying citation counts and a total link strength of 1, indicating some level of collaboration with other countries. Austria and the Netherlands, despite having fewer documents (4 each), exhibit significant citation counts of 472 and 172 respectively, but show no total link strength, implying limited international collaboration in this dataset. Iran, Poland, and Taiwan have similar numbers of documents and relatively low citation counts, with total link strength values of 0, suggesting minimal collaborative ties in the analyzed dataset.

4.3 Institutional contributions

Table 2 presents the top ten institutions active in publishing CBI research. The analysis of selected organizations reveals varied levels of research output, impact, and collaborative strength. Carnegie Mellon University and the University of Pittsburgh both stand out with high total link strengths of 4, indicating robust collaborative networks, and substantial citation counts of 177 and 37, respectively. Pennsylvania State University, with a total link strength of 2 and 66 citations, also shows significant collaborative efforts. In contrast, institutions such as McGill University and City University of New York, despite having high citation counts of 275 and 77, respectively, show a total link strength of 0, suggesting limited collaboration in the dataset. The Hong Kong Institute of Education, York University, and Universidad del Norte display moderate citation counts but lower total link strengths, highlighting areas where collaborative efforts could be enhanced.

4.4 Contributing scholars

Table 3 presents the scholars engaged in CBI research, each having at least two publications. Among them, Jorge E. Gonzalez and Laura Baecher each stand out with three publications, while Stella Kong surpasses them with the highest number of publications at four. This indicates a significant level of research activity and productivity. In terms of citations, Christiane Dalton-Puffer emerges as the most cited author, with an impressive 464 citations, indicating a substantial impact on the academic community. Angel M. Y. Lo and Tom Morton also show high citation counts, with 147 and 121 citations respectively, further highlight-

Table 1. Geographic distribution of CBI studies.

Country/region	Number of publications	Citations	Total link strength
USA	80	1,243	12
Mainland China	24	224	4
Canada	20	641	9
Colombia	16	39	1
Japan	7	88	1
Iran	7	8	0
Spain	5	10	1
Vietnam	4	9	2
Australia	4	92	1
Turkey	4	55	1
Taiwan	4	82	0
Austria	4	472	0
Netherlands	4	172	0
Poland	4	92	0

Table 2. Institutional contributions of CBI studies.

Institution	Number of publications	Citations	Total link strength
Carnegie Mellon University	4	177	4
University of Pittsburgh	4	37	4
Pennsylvania State University	4	66	2
Hong Kong Institute of Education	5	63	1
York University	4	38	1
City University of New York	4	77	0
McGill University	4	275	0
Middlebury Institute of International Studies	4	36	0
University of Hong Kong	4	86	0
Universidad del Norte	6	17	0

ing their influential work. The total link strength, which reflects the connectivity and collaboration among authors, presents another layer of insight. Authors such as Heather Davis, Jorge E. Gonzalez, Sharolyn D. Pollard-Durodola, Nora Resendez, Laura Saenz, and Leina Zhu each have a high total link strength of 12, signifying strong collaborative networks. Notably, Hung Phu Bui also shares this high link strength despite having only one citation, suggesting a robust collaborative presence. Laurent Cammarata and Yuen Yi Lo are notable for their high number of publications coupled with significant citation counts, with Cammarata having three publications and 109 citations, and Yuen Yi Lo with three publications and 52 citations.

4.5 Influential journals and articles

Table 4 demonstrates the journals that have published most CBI studies. Foreign Language Annals leads with 13

publications, showcasing its prominence in L2 education research. Both the Journal of Immersion and Content-Based Language Education and Latin American Journal of Content & Language Integrated Learning have published nine articles each, reflecting a strong focus on immersive and integrative language teaching methods. The International Journal of Bilingual Education and Bilingualism follows with eight publications. The Canadian Modern Language Review and System each have six publications, and The Arab World English Journal has five publications. For the other journals listed in the table, they have published either four or three CBI studies.

The top ten articles with most citations are listed in **Table 5**. Schleppegrell et al. (2004) in TESOL Quarterly lead with the highest citations. This is followed by Tan’ s (2011) study in Language Teaching Research and Lin’ s (2019) research in International Journal of Bilingual Education and

Table 3. Contributing scholars in CBI research.

Author	Number of publications	Citations	Total link strength
Heather Davis	2	54	12
Jorge E. Gonzalez	3	54	12
Sharolyn D. Pollard-Durodola	2	54	12
Nora Resendez	2	54	12
Laura Saenz	2	54	12
Leina Zhu	2	54	12
Hung Phu Bui	2	1	12
Loc Tan Nguyen	2	1	3
Laura Baecher	3	51	3
Gh Beckett	2	64	2
Kathleen Corrales	2	11	2
Xuan Van Ha	2	0	2
Kristen Lindahl	2	19	2
Cesar Maloof	2	11	2
B Mohan	2	64	2
Laurent Cammarata	3	109	2
Christiane Dalton-Puffer	2	25	1
Angel M. Y. Lo	2	147	1
Yuen Yi Lo	3	52	1
Jason Martel	2	36	1
Tarja Nikula	2	74	1
Meriem Baghoussi	2	3	1
Susan Ballinger	2	74	0
Damaris Castro-Garcia	2	2	0
Sang Yee Cheon	2	9	0
Stella Kong	4	61	0
Hiram H. Maxim	2	15	0
Tom Morton	2	121	0
Pablo M. Oliva Parera	2	0	0
Kate Mastruserio Reynolds	2	0	0
Daryl M. Rodgers	2	38	0
Noriko Suzuki	2	0	0
Antonella Valeo	2	14	0
Magdalena Walenta	2	6	0
Ping Wang	2	10	0

Bilingualism. Additionally, Genesee and Lindholm-Leary’s (2013) work in *Journal of Immersion and Content-Based Language Education* and Baik and Greig’s (2009) research in *Higher Education Research & Development* underscore the impact of these studies in their respective areas. The frequent appearance of *Language Teaching Research*, with works by Lyster and Ballinger (2011) and Baecher et al., (2014) points to the journal’s role as a major venue for impactful research in language teaching. Similarly, *Applied Linguistics* with articles by Jakonen and Morton (2015) and Musumeci (1996) continues to be a significant platform for scholarly discourse in applied linguistics. The last article is by Song (2006) in *English for Specific Purposes*.

4.6 Frequently repeated keywords

Keyword analysis is a highlight of the review as it provides a detailed overview of the recurring themes and topics within the CBI research literature. By examining frequently repeated author keywords, the analysis identifies the core areas of interest and emerging trends in the field. With a default threshold of five occurrences as the minimum, 30 keywords are identified by VOSviewer as prominent, as shown in **Table 6**. “Content-based Instruction” has the highest occurrence with 54 mentions and a total link strength of 92, highlighting its significant focus and interconnectedness in the research. “CLIL” appears 18 times with a total link

Table 4. Journals that publish most CBI studies.

Journal	Number of publications
Foreign Language Annals	13
Journal of Immersion and Content-Based Language Education	9
Latin American Journal of Content & Language Integrated Learning	9
International Journal of Bilingual Education and Bilingualism	8
Canadian Modern Language Review	6
System	6
Arab World English Journal	5
Applied Linguistics	4
Journal of Teaching English for Specific and Academic Purposes	4
Korean Language in America	4
Language Teaching Research	4
Modern Language Journal	4
Profile: Issues in Teachers' Professional Development	4
TESOL Journal	4
Computer Assisted Language Learning	3
Hispania	3
HOW—A Colombian Journal for Teachers of English	3
Language Education—UK	3
Modern Journal of Language Teaching Methods	3
Route: Research on Language Education	3

Table 5. Most cited CBI research articles.

Author	Journal	Number of citations (All databases)
Schleppegrell et al. (2004)	TESOL Quarterly	233
Tan (2011)	Language Teaching Research	153
Lin (2019)	International Journal of Bilingual Education and Bilingualism	147
Genesee and Lindholm-Leary (2013)	Journal of Immersion and Content-Based Language Education	120
Baik and Greig (2009)	Higher Education Research & Development	117
Lyster and Ballinger (2011)	Language Teaching Research	99
Jakonen and Morton (2015)	Applied Linguistics	93
Musumeci (1996)	Applied Linguistics	92
Baecher et al. (2014)	Language Teaching Research	67
Song (2006)	English for Specific Purposes	66

strength of 58, emphasizing its prominence in the integration of content and language learning. Both “instruction” and “language” have notable occurrences, 21 and 28 respectively, each with a high total link strength of 47, underscoring their central role in educational research. The keywords “classroom” and “education” are also important, with 14 and 16 occurrences and total link strengths of 43 and 42 respectively, indicating their relevance in the research context. Moreover, the areas of “English” and “immersion” show a strong focus on language-specific studies and immersion techniques. Additionally, “form,” “acquisition,” and “mathematics” indicate specialized research interests in language form, acquisition processes, and subject-specific integration.

Other significant keywords include “achievement,” “grammar,” “recasts,” “students,” and “curriculum,” reflecting a focus on learning outcomes, language accuracy, corrective feedback, participants, and educational structure. Further notable keywords such as “Learners,” “EFL (English as a Foreign Language),” “science,” “content and language integration,” “feedback,” “foreign language,” “knowledge,” “vocabulary,” “literacy,” “motivation,” “teachers,” and “writing” illustrate a diverse range of research interests within the field.

Figure 3 demonstrates the visualization of the above keywords. The central themes of “content-based instruction” and “language” emerge as pivotal, indicating their es-

Table 6. Keyword occurrences.

Keyword	Occurrences	Total link strength
Content-based Instruction	54	92
CLIL	18	58
instruction	21	47
language	28	47
classroom	14	43
education	16	42
English	12	30
immersion	13	26
form	9	25
acquisition	11	22
mathematics	6	22
achievement	7	21
grammar	5	19
recasts	5	19
students	8	19
curriculum	7	16
learners	6	16
EFL	7	15
science	7	15
content and language integration	5	14
Content-based Instruction (CBI)	9	13
feedback	5	13
foreign language	5	13
knowledge	5	12
vocabulary	8	12
literacy	6	11
motivation	5	10
teachers	5	9
writing	6	9
CBI	5	2

essential roles in language education and content-based learning. The analysis identifies six distinct clusters, each representing interconnected concepts within the educational landscape. Cluster 1, encompassing terms such as “acquisition,” “classroom,” “feedback,” “form,” “grammar,” “immersion,” “language,” “learners,” and “recasts,” highlights the pedagogical strategies and classroom dynamics crucial for language acquisition. This cluster demonstrates the interconnectedness of various instructional methods and their impact on learner outcomes. Cluster 2 includes keywords such as “achievement,” “CLIL,” “content-based instruction (CBI),” “curriculum,” “education,” “instruction,” “mathematics,” and “motivation,” emphasizing the broad educational framework. It links content-based instruction with curricular goals and learner motivation across different subject areas. Cluster 3, featuring terms such as “English,” “knowledge,” “literacy,” “science,” “students,” and “teachers,”

focuses on the stakeholders involved in CBI and the subject areas it impacts. This cluster underscores the importance of teacher-student interactions and knowledge dissemination in enhancing literacy and science education. Cluster 4 contains “CBI,” “Content-based Instruction,” “EFL,” “vocabulary,” and “writing,” highlighting specific aspects of language education, particularly EFL, and the significance of vocabulary and writing skills within CBI frameworks. Cluster 5, focusing solely on “content and language integration,” underscores the core objective of CBI, which is to integrate language learning with content instruction. Cluster 6, which includes the term “foreign language,” emphasizes the role of L2 instruction within the broader context of content-based education.

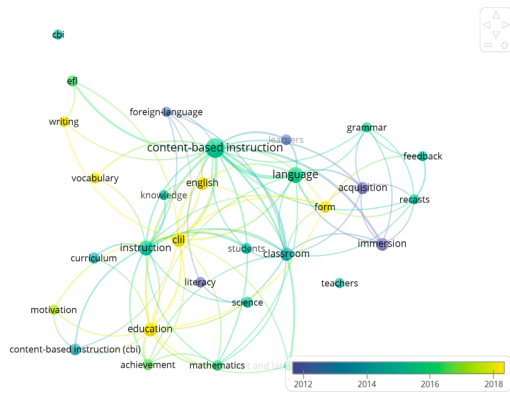


Figure 3. Visualization of high-occurrence keywords.

Furthermore, by color-coding the network to represent temporal trends from 2012 to 2018, with shades ranging from blue (earlier years) to yellow (later years), significant shifts in research and educational focus over time can be discerned. In the earlier years, between 2012 and 2014, the network highlights keywords such as “foreign language” and “learners,” which are more prevalent during this period. The focus appears to be on understanding the role of language learners within the broader context of foreign language acquisition. Additionally, topics related to “acquisition” and “immersion” feature prominently, indicating a strong interest in the mechanisms through which languages are acquired and the immersive environments that facilitate this process. Discussions around “grammar” and “recasts” further suggest an emphasis on the structural components of language learning during these years.

As the timeline progresses into the mid-period between 2014 and 2016, the concept of “content-based instruction” emerges as a central theme, connecting with numerous other keywords. During this phase, “English” becomes more frequently mentioned, indicating a significant focus on English language education. Keywords such as “instruction,” “students,” and “classroom” highlight the educational setting and instructional methods being explored and refined. This period reflects a growing interest in the practical aspects of delivering language education in classroom environments.

In the later years, from 2016 to 2018, the network visualization shows a shift towards broader educational outcomes and frameworks. Keywords such as “education,” “curriculum,” and “motivation” become more prominent, reflecting a deeper consideration of the overall educational experience and the factors that drive student en-

gagement and success. The appearance of terms such as “achievement” and “mathematics” indicates an increasing interest in integrating content-based instruction within specific subject areas, demonstrating the expanding scope of research in this field. The keyword “CLIL” (content and language integrated learning) is highlighted more in recent years, showing its rising relevance and adoption in educational practices. Furthermore, the emphasis on “vocabulary,” “writing,” and “teachers” points to a growing focus on practical language skills and the pivotal role of educators in facilitating effective language learning.

5. Discussion

The trajectory of CBI research highlights its evolution from early foundational studies to periods of significant growth and recent fluctuations in academic interest. Initially, CBI research was limited, reflecting a pioneering phase where the potential benefits of this approach were being explored and established (Brinton et al., 1989; Moeller, 1994; Snow & Brinton, 1988). This period laid crucial groundwork for integrating language learning with subject content, emphasizing its promise for enhancing both linguistic and cognitive development. From 2000 onwards, CBI research experienced substantial growth, marking a phase where it gained broader academic recognition and practical application (Ebata, 2008; Lyster, 2007). This surge indicates an increasing acknowledgment of the effectiveness of CBI in improving language proficiency and content mastery.

Despite the variability in publication numbers in the subsequent years, notably, the recent decline in publications, particularly from 2020 onwards, raises critical considerations for the future of CBI research. With CBI still being embraced by educational providers around the world with policy support (Hu & AlSaqqaf, 2024; Mubaroq & Qamariah, 2024; Victoria, 2024), such as America’s Every Student Succeeds Act (U.S. Department of Education, 2015) and Japan’s Project for Promotion of Global Human Resource Development (Ministry of Education, Culture, Sports, and Science and Technology, n.d.), future research is still necessary to sustain and enhance its effectiveness in the evolving landscape of L2 education. This mirrors Chen and Qin’s (2024) proposal that research on L2 education should be continually adapting to the changing needs of learners and the

global educational environment.

The rapid development of CBI research has yielded rich contextual findings across various socio-cultural settings. Although North America, where CBI was initially proposed (Brinton et al., 1989), remains the primary source of publications, significant advancements in CBI have been particularly evident in Asia, where educational policies and initiatives have embraced and integrated CBI to enhance language learning through the medium of content knowledge (Hosack, 2023; Hu et al., 2023; Latif, 2024). Similarly, in Europe, where CLIL plays a dominant role in L2 education, the adoption of CBI principles has been extensive (Pichon-Vorstman et al., 2020). This international embrace of CBI indicates that the approach is highly adaptable and effective across diverse educational systems and cultural contexts, reflecting a global recognition of its value in developing L2 proficiency.

Numerous researchers have engaged in CBI research, with their work published in journals focusing on various aspects of language education, bilingualism, and applied linguistics. This pattern indicates that CBI is recognized as a multifaceted approach that intersects with numerous sub-fields within language studies (Brown & Bradford, 2017). The scopes of these journals reflect a broad interest in understanding how integrating content and language instruction can enhance educational outcomes. The inclusion of CBI research in journals dedicated to applied linguistics underscores the theoretical and practical significance of this approach (MutiaraniIrpan & RahmanIrpan, 2019). It highlights the ongoing exploration of how language learning theories can be effectively applied in content-rich environments to promote deeper language proficiency and content knowledge. Furthermore, journals that focus on bilingualism and multilingual education demonstrate the relevance of CBI in promoting bilingual competencies, which are increasingly valued in our globalized world (Snow & Brinton, 2023; Sjamsiar, 2019). This diversity also reflects an interdisciplinary approach to CBI research, integrating insights from cognitive science, educational psychology, and sociolinguistics (Zarobe & Banegas, 2024). This interdisciplinary nature allows for a comprehensive examination of how CBI affects not only language acquisition but also cognitive development, cultural competence, and social integration.

The analysis of prominent keywords reveals significant insights into current hot topics and trends in CBI research. CBI itself, along with CLIL, stands out as central themes, highlighting their critical roles in integrating language learning with subject matter content. This focus aligns with global educational policies that increasingly support multilingual education and the use of CBI to enhance both language proficiency and academic achievement (Snow & Brinton, 2023; Suvonova, 2023). Key areas of interest in recent CBI research include pedagogical strategies and classroom dynamics, as indicated by keywords such as “instruction,” “classroom,” and “feedback.” These terms suggest that understanding and optimizing instructional methods remain crucial for effective CBI implementation (Punzalan, 2023; Vinita & Ilankumaran, 2022). The prominence of “language,” “grammar,” and “vocabulary” underscores the ongoing emphasis on language accuracy and the need for explicit language instruction within content-based frameworks (Fitriani, 2019; Latif, 2024).

Research also highlights the importance of practical applications and educational outcomes. Keywords such as “achievement,” “students,” and “curriculum” point to a focus on how CBI impacts academic performance and student engagement (Adawiyah, 2018; Hu & AlSaqqaf, 2024). The inclusion of “motivation” and “learners” indicates a continued interest in how CBI can enhance student motivation and cater to diverse learner needs (Sjamsiar, 2019). The identification of terms such as “English,” “immersion,” and “EFL” suggests a strong focus on English language education and immersion techniques. This aligns with global trends where English is often used as the medium of instruction to prepare students for participation in a globalized world (H. Hu, 2023; Simbolon, 2023).

Meanwhile, several less examined areas are indicated for future research. For example, the terms “mathematics,” “science,” and “content and language integration” suggest emerging interests in integrating CBI into specific academic disciplines beyond language education. These keywords highlight the potential of CBI to enhance content learning in STEM (Science, Technology, Engineering, and Mathematics) (Masharipova, 2022) and other fields with smaller keyword occurrences that were not included in the review, such as history (Oattes et al., 2022), art (Nurpasari & Roza, 2022), and economics (Juraev & Sobirov, 2017), pro-

viding a dual benefit of language proficiency and subject matter expertise. This trend underscores the versatility of CBI and its applicability across various educational contexts and subjects. Furthermore, the occurrence of “teachers” reflects a growing recognition of the critical role educators play in implementing CBI effectively. Teacher training and professional development are essential to equip educators with the skills and knowledge needed to integrate language and content instruction successfully (C. Hu, 2023; Oattes et al., 2022), and this, according to Zairjonovna (2023), is an area of long-lasting research interest.

Existing literature also proposes other areas to be explored in CBI research, such as the impact of technology on CBI implementation (Sariani et al., 2022), the effectiveness of CBI in online and hybrid learning environments (Ismael et al., 2023), the role of cultural context in shaping CBI practices (Suvonova, 2023), and effective assessment practices in content-based programs (Hu, 2022). These aspects are not mentioned in this review because of their low occurrences in the keyword analysis. However, according to Lee (2020, p. 265), “many challenges and issues still exist” in content-based L2 programs. This suggests that the field of CBI is ripe for further exploration and refinement. Future research should address various areas to enhance the understanding and implementation of CBI, ensuring it remains a dynamic and effective approach to language and content instruction in diverse educational settings.

6. Conclusion

This paper reviews previous studies about CBI and demonstrates its evolution in academia across various aspects, including publication patterns, geographic distribution, institutional contributions, contributing scholars, influential journals and articles, and frequently repeated author keywords. Amid the popularity of CBI research, especially in the last decade, a highlight of the review is that it shows CBI research has been conducted in different socio-cultural contexts around the world, moving beyond its birthplace in North America. This suggests that future research could consider adopting a comparative approach to investigate how CBI has been accommodated in specific contexts with evolving characteristics. This review also presents the hot topics in previous research (e.g., “language,” “instruc-

tion,” “motivation,” “English,” “science,” “mathematics”) and identifies under-investigated areas such as assessment in CBI and the impact of technology and culture on CBI practices. By highlighting these trends and gaps, the review underscores the importance of continuing to explore the application of CBI and its relevant issues, shedding light on the dynamic and multifaceted nature of CBI and a broader research agenda to be explored.

However, caution should be exercised since this review only includes publications in WoS, neglecting other databases that have indexed a larger amount of CBI research, such as Google Scholar. This limitation means that the scope of the review may not fully capture the entirety of the research landscape on CBI. Consequently, some significant studies and emerging trends present in other databases might be overlooked. Future reviews could benefit from incorporating a more comprehensive range of databases to provide a more holistic view of the field.

Author Contributions

Conceptualization, Lu Zhang and Hanita Hanim Ismail; methodology, Lu Zhang; software, Lu Zhang; validation, Hanita Hanim Ismail and Nur Ainil Sulaiman; formal analysis, Lu Zhang; investigation, Lu Zhang; resources, Lu Zhang; data curation, Lu Zhang; writing—original draft preparation, Lu Zhang; writing—review and editing, Hanita Hanim Ismail and Nur Ainil Sulaiman; visualization, Lu Zhang; supervision, Hanita Hanim Ismail and Nur Ainil Sulaiman. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Data Availability Statement

The data are available upon reasonable request from the correspondence author.

Funding

This work received no external funding.

References

- Adawiyah, R.A., 2018. The Effectiveness of Content Based Instruction in Teaching Speaking Skill for EFL Learners. *Voices of English Language Education Society*. 2(2), 105–112. DOI: <https://doi.org/10.29408/veles.v2i2.846>
- Ahmi, A., 2022. *Bibliometric Analysis for Beginners*. Penerbit Universiti Utara Malaysia.
- Baecher, L., Farnsworth, T., Ediger, A., 2014. The challenges of planning language objectives in content-based ESL instruction. *Language Teaching Research*. 18(1), 118–136. DOI: <https://doi.org/10.1177/1362168813505381>
- Baik, C., Greig, J., 2009. Improving the academic outcomes of undergraduate ESL students: the case for discipline-based academic skills programs. *Higher Education Research & Development*. 28(4), 401–416. DOI: <https://doi.org/10.1080/07294360903067005>
- Ballman, T.L., 1997. Enhancing Beginning Language Courses Through Content-Enriched Instruction. *Foreign Language Annals*. 30(2), 173–186. DOI: <https://doi.org/10.1111/j.1944-9720.1997.tb02340.x>
- Brinton, D., Snow, M.A., Wesche, M.B., 1989. *Content-based Second Language Instruction*. Heinle & Heinle.
- Brown, H., Bradford, A., 2017. EMI, CLIL, & CBI: Differing Approaches and Goals. In P. Clements, A. Krause, H. Brown (Eds.), *Transformation in English Education* (pp. 328–334). JALT.
- Chen, J., Qin, F., 2024. A Tentative Study of Foreign Language Teaching in the Context of Metaverse. *Journal Beijing International Studies University*. 46(1), 99–108. DOI: <https://doi.org/10.12002/j.bisu.500>
- Cohen, J., 1960. A coefficient for agreement for nominal scales. *Educational and Psychological Measurement*. 20(1), 37–46. DOI: <https://doi.org/10.1177/0013164460020001>
- Ebata, M., 2008. *Content Based Instruction*. ERIC Clearinghouse.
- Fitriani, S., 2019. Content Based Instruction and its Effect in Teaching Speaking. In Abdullah, A.G., Danuwijaya, A.A., Haristiani, N., et al., (Eds.), *Proceedings of the Second Conference on Language, Literature, Education, and Culture* (pp. 149–152). Atlantis Press. DOI: <https://doi.org/10.2991/icollite-18.2019.32>
- Genesee, F., Lindholm-Leary, K., 2013. Two case studies of content-based language education. *Journal of Immersion and Content-Based Language Education*. 1(1), 3–33. DOI: <https://doi.org/10.1075/jicb.1.1.02gen>
- Grippin, P., Peters, S., 1984. *Learning Theory and Learning Outcomes: The Connection*. University Press of America.
- Hidayati, N.N., 2023. Mapping Business English Researches Globally: A Bibliometric Analysis Using VOS Viewer. *Surakarta English and Literature Journal*. 6(2), 250–269. DOI: <https://doi.org/10.52429/selju.v6i2.149>
- Hosack, I., 2023. Addressing Citizenship Teaching Objectives through English Language Classes in Japan's Secondary Schools: Exploring Teachers' Perceptions. *Ritsumeikan Social Sciences Review*. 58(4), 1–18. <https://cir.nii.ac.jp/crid/1390295447137445760>
- Hu, C., 2023. Research in progress: CLIL teachers' identity construction and negotiation. *The New Educational Review*. 72(2), 244–252. DOI: <https://doi.org/10.15804/ner.2023.72.2.18>
- Hu, H., 2022. Examining teacher competencies in content and language integrated learning: Professional profiles and ways forward. *Rupkatha Journal on Interdisciplinary Studies in Humanities*. 14(2), 1–22. DOI: <https://doi.org/10.21659/rupkatha.v14n2.26>
- Hu, H., 2023. Emerging from content and language integrated learning and English-medium instruction, is CLIL-ised EMI the next trend of education? *Higher Learning Research Communications*. 13(2), 1–8. DOI: <https://doi.org/10.18870/hlrc.v13i2.1422>
- Hu, H., Mi, A., 2024. Localisation of content and language integrated learning in China: tensions in teacher professional development. *Journal of Multilingual and Multicultural Development*. DOI: <https://doi.org/10.1080/01434632.2024.2380099>
- Hu, H., Said, N.E.M., Hashim, H., 2023. Sustaining content and language integrated learning in China: a systematic review. *Sustainability*. 15(5), 3894. DOI: <https://doi.org/10.3390/su15053894>
- Hu, K., AlSaqqaf, A., 2024. Conceptualizing the Integration of a 3As Approach Content-Based Instruction into Teaching Business English Speaking to Chinese EFL Undergraduates. *International Journal of Academic Research in Business and Social Sciences*. 14(2), 367–382. DOI: <https://doi.org/10.6007/IJARBS/v14-i2/20728>
- Ismael, I.I.A.-h., Ali, M.M., Nasr, D.S., 2023. The Effect of Using Blended Content-Based Instruction (BCBI) to Enhance EFL University Students' Oral Communication Skills. *Journal of Studies in Curricula and Teaching Methods*. (260), 125–149. DOI: <https://doi.org/10.21608/MJAT.2023.321428>
- Jakonen, T., Morton, T., 2015. Epistemic Search Sequences in Peer Interaction in a Content-based Language Classroom. *Applied Linguistics*. 36(1), 73–94. DOI: <https://doi.org/10.1093/applin/amt031>

- Juraev, A., Sobirov, T., 2017. Content Based Instruction in Teaching Tourism and Economics Courses. In Proceedings of the International Scientific Conference (Vol. 1, pp. 208– 215). Rēzeknes Tehnoloģiju akadēmija. DOI: <https://doi.org/10.17770/sie2017vol1.2309>
- Karim, M., Ghorbanchian, E., 2022. Effects of Adjunct Model of Instruction on EAP Learners' Reading Comprehension Skill. *Theory and Practice of Second Language Acquisition*. 8(2), 1–20. DOI: <https://doi.org/10.31261/TAPSLA.10432>
- Kennedy, T., Odell, M., Jensen, F., Austin, L., 1998. A Content-Based, Hands-On Program: Idaho FLES. *Hispania*, 84(1), 933–940. DOI: <https://doi.org/10.2307/345806>
- Krashen, S.D., 1987. *Principles and Practice in Second Language Acquisition*. Pergamon.
- Krueger, M., Ryan, F., 1993. *Language and Content: Discipline- and Content-based Approaches to Language Study*. D.C. Heath and Company.
- Lailiyah, M., 2016. Content and language integrated learning in teaching English as a second language: a systematic review of empirically based articles. *EnJourMe (English Journal of Merdeka): Culture, Language, and Teaching of English*. 1(1), 1–10. DOI: <https://doi.org/10.26905/enjourme.v1i1.278>
- Latif, O.L.I.A., 2024. Using Content-Based Sheltered Instruction Observation Protocol (SIOP) for Developing Faculty of Education Second Year English Majors' Language Proficiency. *Journal of Research in Education and Psychology*. 39(2), 265–319. DOI: <https://doi.org/10.21608/MATHJ.2024.286741.1440>
- Lee, S., 2020. Second/foreign Language Literacy in Content integrated Instructions across Contexts. *Bulletin of Miyazaki Municipal University Faculty of Humanities*. 27(1), 245–269. <https://miyazaki-mu.repo.nii.ac.jp/records/1303>
- Lin, A.M.Y., 2019. Theories of trans/languageing and trans-semiotizing: implications for content-based education classrooms. *International Journal of Bilingual Education and Bilingualism*. 22(1), 5–16. DOI: <https://doi.org/10.1080/13670050.2018.1515175>
- Liu, Y., 2019. 近十年 CLIL 教学研究的现状, 热点及趋势——基于 CiteSpace 的可视化分析 [Current status, hotspots and trends of CLIL teaching research in the past ten years-visual analysis based on Cite Space]. *太原城市职业技术学院学报 [Journal of Taiyuan Urban Vocational College]*. (1), 120–122. DOI: <https://doi.org/10.16227/j.cnki.tyces.2019.0045>
- Lyster, R., 2007. *Learning and Teaching Languages Through Content: A Counterbalanced Approach*. John Benjamins Pub.
- Lyster, R., 2017. *Content-Based Language Teaching*. Routledge.
- Lyster, R., Ballinger, S., 2011. Content-based language teaching: Convergent concerns across divergent contexts. *Language Teaching Research*. 15(3), 279–288. DOI: <https://doi.org/10.1177/1362168811401150>
- Masharipova, F.J., 2022. Techniques for enhancing reading competence on the CBI/STEM Domain. *Foreign Languages in Uzbekistan*. 4(45), 98– 109. DOI: <https://doi.org/10.36078/1666329625>
- Moeller, A.J., 1994. Content-Based Foreign Language Instruction In the Middle School: An Experiential Learning Approach. *Foreign Language Annals*. 27(4), 535–544. DOI: <https://doi.org/10.1111/j.1944-9720.1994.tb01231.x>
- Mubarq, S., Qamariah, Z., 2024. Curriculum Approaches in English Language Teaching in Indonesia. *Jurnal Ilmu Pendidikan Nasional*. 2(1), 1–6. DOI: <https://doi.org/10.59435/jipnas.v2i1.105>
- Mufaridah, F., Nurkamilah, N., 2023. A Study of the 21st Century Teaching Competences in Content -Based Instruction Implementation. *New Language Dimensions*. 4(1), 1–10. DOI: <https://doi.org/10.26740/nld.v4n1.p1-10>
- Musumeci, D., 1996. Teacher-Learner Negotiation in Content-Based Instruction: Communication at Cross-Purposes? *Applied Linguistics*. 17(3), 286–325. DOI: <https://doi.org/10.1093/applin/17.3.286>
- Mutiarani Irpan, M., Rahman Irpan, A., 2019. Theme Based Instruction Model in Teaching Extensive Reading. *English Language in Focus*. 2(1), 43– 52. DOI: <https://doi.org/10.24853/elif.2.1.43-52>
- Nawrot-Lis, B., 2020. Insights into CLIL methodology. *Polish Journal of Continuing Education*. 2020(1), 66–79. DOI: <https://doi.org/10.34866/ggg9-1m29>
- Nurjannah, S., Erniati, E., N, J., 2020. The Use of Content Based Instruction in English Language Teaching. *DIKDAS MATAPPA: Jurnal Ilmu Pendidikan Dasar*. 3(2), 359–363. DOI: <https://doi.org/10.31100/dikdas.v3i2.809>
- Nurpasari, T., Roza, V., 2022. Students' Perception On Content Based Instruction At SMAN 5 Bukittinggi. *Jurnal Pendidikan Tambusai*. 6(2), 14509–14513. DOI: <https://doi.org/10.31004/jptam.v6i2.4725>
- Oattes, H., Wilschut, A., Oostdam, R., Fukkink, R., de Graaff, R., 2022. Practical solution or missed opportunity? The impact of language of instruction on Dutch history teachers' application of pedagogical content knowledge (PCK). *Teaching and Teacher Education*. 115, 103721. DOI: <https://doi.org/10.1016/j.tate.2022.103721>
- Öztürk, O., Kocaman, R., Kanbach, D.K., 2024. How to design bibliometric research: an overview and a framework proposal. *Review of Managerial Science*. DOI: <https://doi.org/10.1007/s11846-024-00738-0>

- Pichon-Vorstman, E.L., Siarova, H., Szőnyi, E. (Eds.), 2020. The future of language education in Europe: case studies of innovative practices. Publications Office of the European Union. DOI: <https://doi.org/10.2766/81169>
- Punzalan, Y.A., 2023. Content-based problem solving instruction of Grade 2 learners towards a plan of action. *International Journal of Research Publications*, 137(1), 37–62. DOI: <https://doi.org/10.47119/IJRP10013711120235670>
- Richter, K., 2021. Educational outcomes in multilingual CLIL school settings: a systematic review [Master's thesis]. University of Oxford. Available from: <https://ora.ox.ac.uk/objects/uuid:52221dda-7655-4771-ad7b-66f8c3ee23ca>
- Sariani, S., Yaningsih, Y., Rozi, F., 2022. Implementing Content-Based Instruction (CBI) on EFL Student's Writing through Technology-Enhanced Language Teaching. *The Asian Institute of Research Education Quarterly Reviews*. 5(1), 174–184. DOI: <https://doi.org/10.31014/aior.1993.05.01.429>
- Schleppegrell, M.J., Achugar, M., Oteiza, T., 2004. The Grammar of History: Enhancing Content-Based Instruction Through a Functional Focus on Language. *TESOL Quarterly*. 38(1), 67–93. DOI: <https://doi.org/10.2307/3588259>
- Simbolon, N.E., 2023. English medium instruction (EMI) in higher education: Insights from Indonesian vocational lecturers. *Utamax: Journal of Ultimate Research and Trends in Education*. 5(1), 11–20. DOI: <https://doi.org/10.31849/utamax.v5i1.9973>
- Singh, Y.K., Dubey, B.K., 2021. Introduction of research methods and publication ethics. Friends Publications.
- Sjamsiar, D., 2019. The Use of Content-Based Instruction to Raise the Motivation of Animation Design Students. In *Proceedings of 3rd English Language and Literature International Conference* (Vol. 3, pp. 45–49). Universitas Muhammadiyah Semarang.
- Snow, A., Brinton, D., 2023. Content-Based Instruction: What Every ESL Teacher Needs to Know. University of Michigan Press.
- Snow, M.A., Brinton, D.M., 1988. Content-Based Language Instruction: Investigating the Effectiveness of the Adjunct Model. *TESOL Quarterly*. 22(4), 553–574. DOI: <https://doi.org/10.2307/3587256>
- Song, B., 2006. Content-based ESL instruction: Long-term effects and outcomes. *English for Specific Purposes*. 25(4), 420–437. DOI: <https://doi.org/10.1016/j.esp.2005.09.002>
- Zarobe, Y.R.d., Banegas, D.L. (Eds.), 2024. Content and Language Integrated Learning in South America. Springer.
- Zhang, L., Hu, H., 2024. Innovation in Practice: Sun, Y., 2023. Teaching reform and practice of English for specific academic purposes using content and language integrated approach. *Advances in Education*. 13(6), 3968–3974. DOI: <https://doi.org/10.12677/ae.2023.136631>
- Suvonova, D.K., 2023. General Overview of Content-Based Instruction Approach (CBI) in Teaching Foreign Languages. *Golden Brain*. 1(17), 374–380. Available from: <https://research-edu.org/index.php/goldenbrain/article/view/4102>
- Swain, M., 1985. Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass, C. Madden (Eds.), *Input in second language acquisition* (pp. 235–253). Newbury House.
- Tan, M., 2011. Mathematics and science teachers' beliefs and practices regarding the teaching of language in content learning. *Language Teaching Research*. 15(3), 325–342. DOI: <https://doi.org/10.1177/1362168811401153>
- U.S. Department of Education., 2015. Every Student Succeeds Act (ESSA) (114–95, Issue S. 1177). Available from: <https://www.congress.gov/114/plaws/publ95/PLAW-114publ95.pdf>
- Una, S., 2021. Developing Economic English Instructional Material Based on Shariah Economy System. Penerbit NEM.
- van Eck, N.J., Waltman, L., 2010. Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*. 84, 523–538. DOI: <https://doi.org/10.1007/s11192-009-0146-3>
- Victoria, R., 2024. Peculiarities of Integrating All Language Skills. *Economy and Innovation*. 48, 29–32. Available from: https://www.gospodarkainnowacje.pl/index.php/issue_view_32/article/view/2695
- Vinita, V.J., Ilankumaran, M., 2022. Student Centric Approach of the Content Based Instruction and Instructional Scaffolding. *International Journal of Recent Technology and Engineering*. 11(1), 116–122. DOI: <https://doi.org/10.35940/ijrte.A6962.0511122>
- Vygotsky, L.S., 1978. *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press.
- Wright, A., 2023. Two Birds with One Stone: Teaching English with Content Based Instruction. *Jissen Women's University CLEIP Journal*. 9, 51–59. <https://cir.nii.ac.jp/crid/1520296221564670848>
- Zairjonovna, Z.Z., 2023. The Effectiveness of Content Based Instruction in EFL Contexts. *Educational Research in Universal Sciences*. 2(5), 112–114. Available from: <http://erus.uz/index.php/er/article/view/2602/3307>
- Embracing Multilingualism in an intensive English programme. *Higher Learning Research Communications*. 14, 18–34. DOI: <https://doi.org/10.18870/hlrc.v14i0.1514>