

Mapping Research Hotspots and Evolutionary Trends in Curriculum-based Ideological and Political Education Reform in Architecture-related Undergraduate Programmes: A CiteSpace Analysis

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Abstract: Curriculum-based ideological and political education (CIPE) is a major policy priority in Chinese higher education. It has particular relevance to architecture-related programmes, where studio and planning work requires students to link technical choices to public interests, cultural heritage, ecological responsibilities and professional ethics. Yet the structure and changing emphases of CIPE research in these disciplines have not been systematically examined. We analysed 733 CNKI journal records published between 2018 and 2026 using CiteSpace 7.0.1. Annual output, keyword co-occurrence, clustering, timelines and burst detection were examined. Publications increased sharply from 2018 to 2022 and remained numerous from 2023 to 2025. The network contained 292 nodes and 758 links. CIPE occupied the most central position, while teaching reform, landscape architecture, instructional design, ideological and political education, architecture and urban–rural planning formed the principal related themes. The 12 clusters linked curriculum and teaching design with disciplinary contexts, rural revitalization, implementation pathways, collaborative education and labour education. Timeline and burst results show a movement towards course design, practice-based learning, curriculum construction and digitally supported teaching. The analysis identifies patterns of publication and themes in the literature. Evidence on student learning, assessment systems and implementation in authentic project settings is still required.

1. Introduction

CIPE brings value education into the teaching of disciplinary knowledge and professional capability. National policy has called for universities to embed it across the curriculum [1]. Studies

of ideological and political education describe a university-wide arrangement involving teaching, institutional management and student support [2]. For architecture-related programmes, the issue enters through the work students do in design studios and planning courses. Their decisions may affect environmental benefits, cultural meanings and public risk. Research on sustainable architectural education has also considered strategic urban-design reasoning, multispecies perspectives and participatory digital methods [3,4,6].

Contemporary studio research also shows a rapid shift from isolated digital tools toward AI-supported programming, sustainable design and ethically framed curricular integration [5,7-10]. These studies offer course-level evidence but do not show how Chinese CIPE research in architecture-related disciplines is organized or how its priorities have changed. This study therefore maps publication growth, keyword and cluster structure, and emerging topics across architecture-related undergraduate programmes.

2. Materials and methods

2.1 Data source and retrieval

CNKI academic-journal records were used as the data source. The topic query combined terms for CIPE and ideological and political education with terms for architecture-related undergraduate fields, including architecture, urban and rural planning, urban planning, landscape architecture, architectural design and urban design. After manual screening and removal of records with missing publication years, 733 valid records were retained. The timespan was 2018–2026. Because the 2026 observation year was incomplete at the time of retrieval, its count is interpreted as a partial-year signal rather than as a value directly comparable with completed years.

2.2 Science-mapping procedure

CiteSpace 7.0.1 was used to analyse annual output, keyword co-occurrence, clusters, timelines and burst terms. The analysis used one-year slices, g-index selection ($k = 25$), LRF = 3.0, L/N = 10, LBY = 5 and $e = 1.0$. Study design, performance analysis and science mapping followed established and recent bibliometric guidance [14-16]; betweenness centrality was treated as a bridging indicator [17], and burst detection as a marker of temporally concentrated attention [18].

2.3 Interpretation principles

Bibliometric mapping describes patterns in bibliographic metadata and keywords. It cannot establish the quality of instructional implementation, causal effects of policy, or student learning outcomes. The discussion therefore interprets the findings as patterns of research attention and thematic linkage. Claims about teaching effectiveness require direct empirical evidence.

3. Results

3.1 Annual publication output

As shown in Figure 1 and Table 1, two records were published in 2018. The number then rose to 17 in 2019, 58 in 2020, 83 in 2021 and 134 in 2022. Annual output remained between 123 and 132 records from 2023 to 2025. The 2026 figure was 58 when the data were retrieved and covers only part of the year. The series shows that this literature grew quickly and then remained active. The

timing coincides with the policy rollout, although the data do not isolate the effect of any single policy.

3.2 Keyword co-occurrence and research hotspots

The keyword network comprised 292 nodes and 758 links (density = 0.0178) in Figure 2. CIPE was the central keyword (frequency = 464; degree = 383) in Table 2, followed by teaching reform (137), landscape architecture (66), instructional design (42), ideological and political elements (40), ideological and political education (35), architecture (30) and urban–rural planning (30). These terms indicate that the field is organized around an overarching educational agenda and a set of discipline-specific sites in which that agenda is enacted. High frequency should be read as broad topical presence, whereas centrality indicates a possible bridging role between themes.

Four interconnected hotspots are evident. First, terms such as CIPE, ideological and political education, moral cultivation and curriculum reform concern the alignment of value formation with programme and course structures. Second, teaching reform, instructional design, ideological and political elements and teaching practice shift attention from whether CIPE should be integrated to how it can be designed and enacted. Third, landscape architecture, architecture, urban–rural planning, landscape design and architectural design show that the field is differentiated by disciplinary contexts. Fourth, rural revitalization, ecological civilization, traditional culture and collaborative education bring curriculum reform into contact with social and spatial questions encountered in practice.

3.3 Cluster structure

The network produced a modularity value of $Q = 0.4064$ and a weighted mean silhouette value of $S = 0.8201$ as shown in Figure 3. These values support the use of 12 clusters with internally coherent labels in Table 3. CIPE sat at the centre of the cluster map. Teaching design, teaching reform and implementation pathways linked it with disciplinary areas. Landscape architecture, urban–rural planning, architectural design and landscape design provided the main disciplinary settings. Rural revitalization, collaborative education and labour education extended the discussion to social practice and training.

3.4 Temporal evolution and burst terms

The timeline points to three periods in Figure 4. Early publications centred on ideological and political education, professional education, CIPE and curriculum systems. From 2019 to 2021, architecture, architectural design, landscape architecture, instructional design and teaching practice occurred more often, bringing course-level organization into view. In later years, urban–rural planning, rural revitalization, curriculum construction and digital teaching became more visible. Burst detection follows the same broad sequence in Figure 5. Landscape design had the strongest burst in 2020–2021 (strength = 3.70). Teaching mode and curriculum construction became prominent in 2023–2024, with strengths of 3.01 and 2.00.

Table 1. Annual publication output in the analysed corpus.

Year	2018	2019	2020	2021	2022	2023	2024	2025	2026*
Records	2	17	58	83	134	123	132	126	58

Table 2. High-frequency keywords and network indicators.

Keyword	Frequency	Betweenness centrality	Degree	First appearance
Curriculum-based ideological and political education	464	1.33	383	2019
Teaching reform	137	0.15	118	2019
Landscape architecture	66	0.14	84	2020
Instructional design	42	0.03	48	2021
Ideological and political elements	40	0.05	49	2020
Ideological and political education	35	0.10	55	2019
Architecture	30	0.04	39	2020
Urban-rural planning	30	0.03	36	2019
Landscape design	27	0.04	32	2020
Architectural design	26	0.04	42	2019

Table 3. Final keyword-cluster labels.

Cluster	English label	Cluster	English label
#0	Curriculum-based ideological and political education	#6	Implementation pathways
#1	Teaching design	#7	Teaching reform
#2	Landscape architecture	#8	Ideological and political education
#3	Urban-rural planning	#9	Landscape design
#4	Architectural design	#10	Collaborative education
#5	Rural revitalization	#11	Labour education

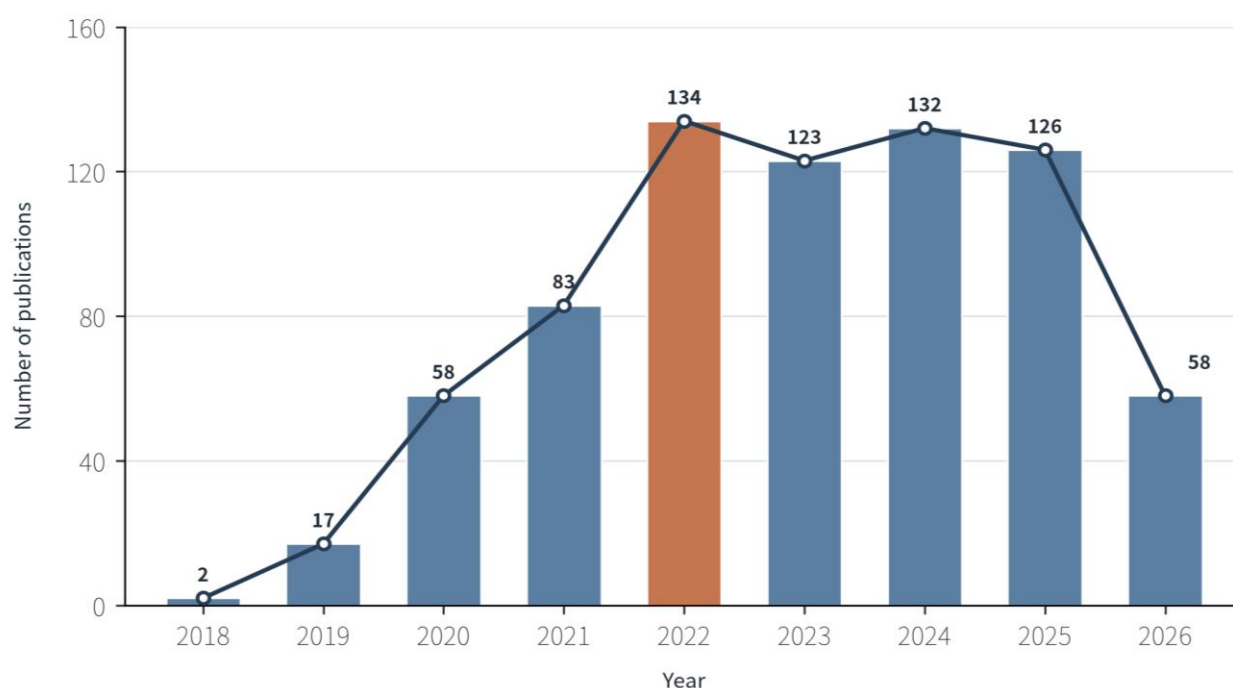


Figure 1. Annual publication output on CIPE reform in architecture-related undergraduate programmes, 2018–2026. *The 2026 count is partial.

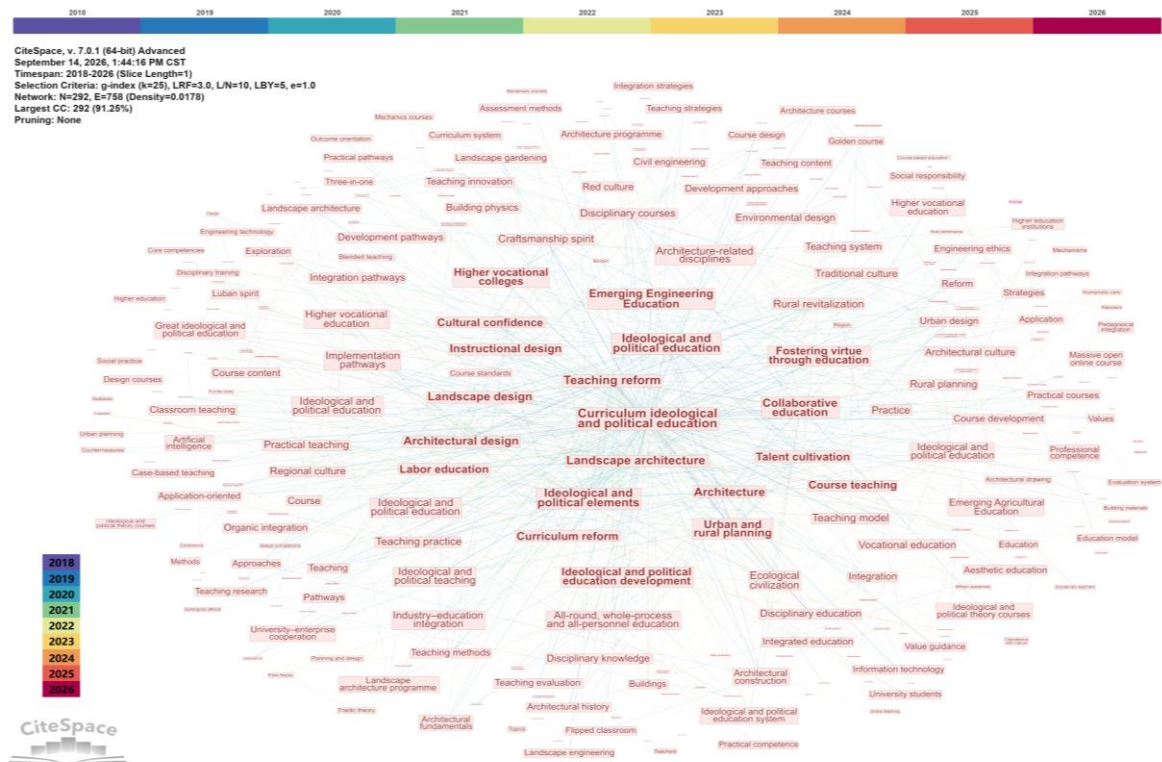


Figure 2. Keyword co-occurrence network of CIPE reform research in architecture-related undergraduate programmes.

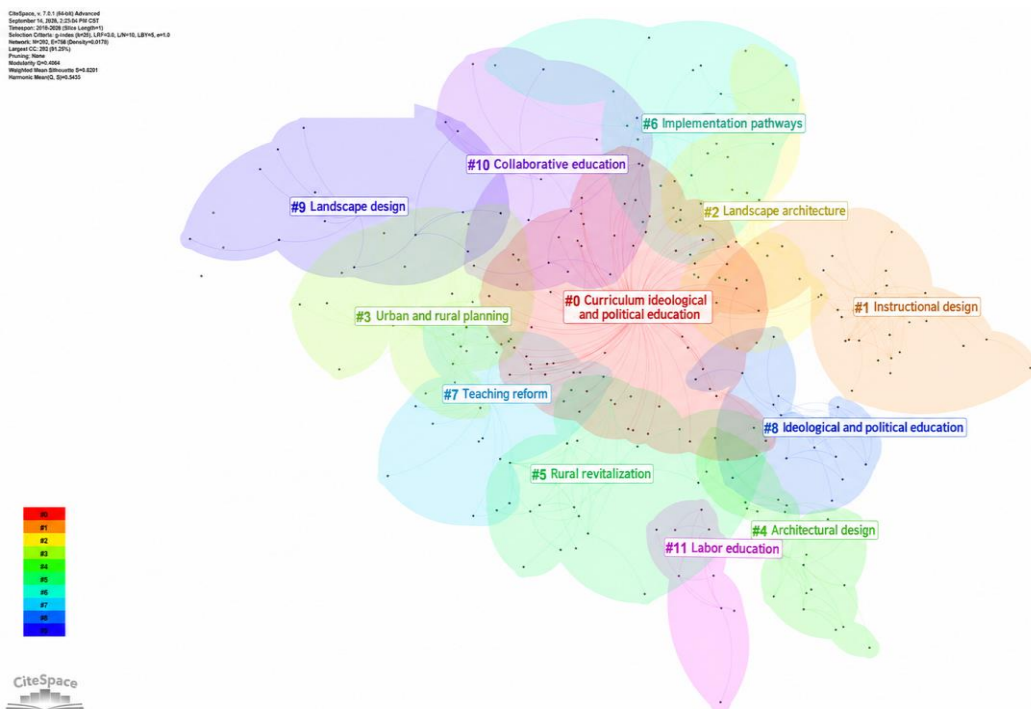


Figure 3. Keyword cluster map of CIPE reform research in architecture-related undergraduate programmes.

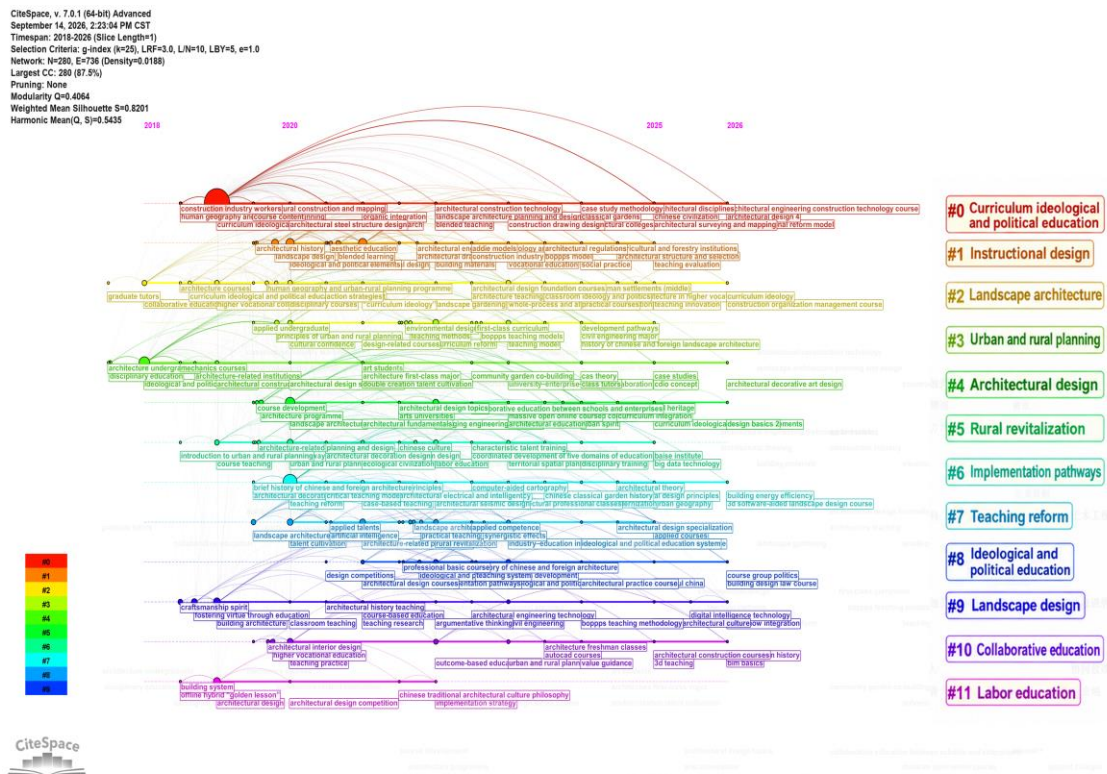


Figure 4. Keyword timeline view of CIPE reform research in architecture-related undergraduate programmes.

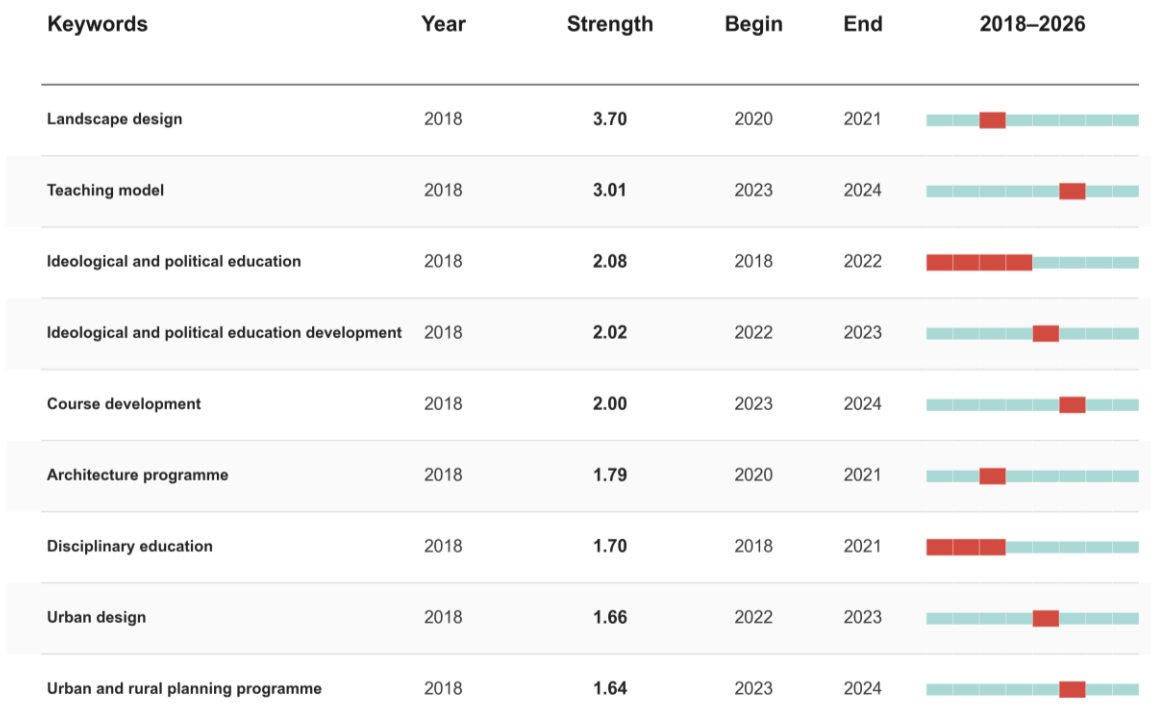


Figure 5. Keyword burst-term map of CIPE reform research in architecture-related undergraduate programmes, 2018–2026.

4. Discussion

The maps suggest that CIPE research in architecture-related programmes is moving from general value statements toward curriculum design and situated practice. Because architecture, planning and landscape education connect technical decisions with social and environmental consequences, disciplinary tasks can make value-oriented learning concrete. Recent work on strategic urban design, human-centred design education and experiential studio learning supports programme-level sequencing of research, stakeholder reasoning, iteration and reflection [3,12,13].

Curriculum-group coordination could connect progressively demanding tasks across design, planning, landscape and technical courses. Heritage-renewal work, ecological design briefs and sustainability-focused studios offer authentic contexts in which students can justify choices and weigh competing human and non-human interests [4,6,8]. These implications remain propositions for instructional design rather than demonstrated effects of CIPE.

The recent prominence of curriculum construction and teaching mode also points to assessment and digital tools. Architectural-education studies report benefits from AI-supported programming, visualization and iterative exploration, while also emphasizing structured guidance, sustainability literacy, authorship, bias and accountability [5,7-11]. Assessment should therefore focus on students' reasoning, evidence and revision rather than the presence of ideological content or polished AI output alone.

The analysis was limited to CNKI journal records and depended on the consistency of bibliographic metadata and author keywords. Books and conference papers were not included. The dataset also contained no direct evidence on policy implementation or student outcomes, and 2026 was incomplete. The maps therefore describe publication activity and thematic connections. They cannot assess teaching quality or identify causal effects. A subsequent study could combine additional databases with classroom- or student-level evidence to examine whether the approaches identified here improve learning.

5 Conclusions

Based on 733 CNKI journal records, this study maps the intellectual structure and temporal development of research on CIPE reform in architecture-related undergraduate programmes. The field expanded rapidly after 2020 and maintained substantial output from 2022 to 2025. CIPE was the central keyword, linking teaching reform and instructional design to architecture-related disciplinary contexts. Cluster, timeline and burst analyses indicate a progression from basic value-professional education alignment toward curriculum construction, implementation pathways, authentic practice and collaborative education. The findings support a research agenda that examines curriculum-group coordination, situated project learning, assessment evidence and the responsible use of digital tools. Bibliometric patterns, however, should be complemented by direct empirical evidence before claims are made about educational effectiveness.

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