

SERVICE QUALITY AND EMPLOYABILITY IN CHINESE VOCATIONAL EDUCATION

QUALIDADE DO SERVIÇO E EMPREGABILIDADE NA EDUCAÇÃO PROFISSIONALIZANTE CHINESA

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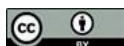
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Abstract

This systematic scoping review assesses service quality in China's vocational undergraduate education (VUE) system. The research team identified 31 key records from Web of Science, Scopus, Chinese national policy documents, and 2025 institutional quality reports (2019–2025), following PRISMA-ScR guidelines. Using the HEdPERF framework, evidence was organized across five dimensions. These included academic aspects, non-academic support, program issues, access, and reputation. Results show that academic competence (90.3% of records) and program design (80.6%) dominate, with a focus on "double-qualified" faculty and industry-integrated curricula. Access (29.0%) and non-academic support receive limited attention due to institutional and administrative bottlenecks. Perceived employability serves as the primary mediator linking service inputs to student loyalty under the Stimulus–Organism–Response framework—students demonstrate loyalty based on anticipated career returns rather than institutional prestige. The study proposes a service–employability–loyalty pathway specific to VUE contexts and identifies three areas for improvement. These findings connect vocational higher education quality research with skills-based economic development.

Resumo

Esta revisão sistemática scoping avalia a qualidade dos serviços no sistema de Educação Profissional Universitária (VUE) da China. A equipe identificou 31 registros-chave da Web of Science, Scopus, documentos políticos nacionais chineses e relatórios institucionais de qualidade de 2025 (2019–2025), seguindo as diretrizes PRISMA-ScR. Utilizando o modelo HEdPERF, as evidências foram organizadas em cinco dimensões: aspectos acadêmicos, suporte não acadêmico, questões programáticas, acesso e reputação. Os resultados mostram que competência acadêmica (90,3% dos registros) e desenho programático (80,6%) dominam, com foco em corpo docente “duplamente qualificado” e currículos integrados à indústria. Acesso (29,0%) e suporte não acadêmico recebem atenção limitada devido a gargalos institucionais e administrativos. A empregabilidade percebida atua como o principal mediador entre os insumos de serviço e a lealdade do estudante no quadro Estímulo–Organismo–Resposta — os estudantes demonstram lealdade com base nos retornos de carreira antecipados, não no prestígio institucional. O estudo propõe uma via serviço–empregabilidade–lealdade específica para contextos de VUE e identifica três áreas de



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melhoria. Esses achados conectam a pesquisa em qualidade da educação profissional superior ao desenvolvimento econômico baseado em competências.

Palavras-chave: China. Empregabilidade. Revisão de Literatura. Educação Profissional Universitária.

1 INTRODUCTION

Digitalization, together with Artificial Intelligence (Promsiri 2025) and sustainable practices, has created a need for workers with advanced technical skills. Workers need to perform their tasks within digitally integrated value chains (Thakuri *et al.* 2025), which require both theoretical knowledge and practical skills. As a result, vocational education systems in developing countries that want to improve their industrial competitiveness now face greater evaluation demands (OECD 2023; Spöttl and Windelband 2021).

In China, this coincides with the rapid expansion of Vocational Undergraduate Education (VUE), elevating three-year colleges to four-year degree-granting institutions with industry integration. This aligns with China's National Vocational Education Reform Implementation Plan (MOE, 2019) and the revised Vocational Education Law, establishing parity between vocational and academic degrees. These reforms aim to improve the quality and social recognition of applied technical education.

However, the current understanding of how VUE defines and measures service quality (SQ) needs further investigation. The initial development of commercial assessment tools such as SERVQUAL and SERVPERF (Chaichinarat *et al.* 2018; Melean Romero *et al.* 2024) has been followed by their applications in vocational education assessment (Rasheed & Rashid 2024). The VUE institutions face unique operational conditions that make it difficult to adopt new technologies, according to Mongkhonvanit and Choomnoom (2022). The concept of educational SQ within institutions includes elements from curriculum development, employer partnerships, certification systems, and student employment opportunities after graduation (Düzgünçınar, 2025; Kantathanawat

et al., 2025; Seetao *et al.*, 2025). Thus, SQ encompasses curriculum design, employer engagement, certification pathways, and graduate transitions.

Additionally, this study also focuses on the HEdPERF model, which addresses these limitations through dimensions such as academic competence, non-academic support, reputation, access, and program issues (Mohammed *et al.*, 2023; Wati *et al.*, 2024). These are reconstructed for VUE.

For example, the 'Academic' dimension is redefined as "Double-Qualified" faculty that bridges theory and industrial application (Khaled *et al.*, 2014). VUE's "Reputation" dimension signals "Professional Sovereignty" (Wheelahan, 2015), consistent with signaling theory (Butt *et al.*, 2024), helping close the historical "Dignity Gap" associated with vocational tracks. By aligning reputation with modern apprenticeship (Markowitsch & Wittig, 2022), VUE fosters genuine societal esteem (Billett *et al.*, 2022).

Employability—the psycho-social construct of perceived employment capacity (Fugate *et al.*, 2004)—operates as a mediator linking service quality to student loyalty and program commitment. Student loyalty in higher education is associated with satisfaction, organizational identity (Al Hassani & Wilkins, 2022), and reputation (Al Hassani & Wilkins, 2022). Nevertheless, vocational students may assess institutional performance through practical metrics rather than prestige.

The Stimulus–Organism–Response (S-O-R) paradigm (Goi *et al.*, 2018) provides an interpretive lens: service inputs (stimulus) influence internal evaluations (organism), shaping behavioral intentions (response). In VUE, service quality influences perceived employability, which in turn affects loyalty and advocacy.

Academic research on service quality in China's VUE sector remains incomplete, despite policymakers' and reporting requirements showing minimal interest in this field. Existing research studies employ different frameworks and methods to achieve distinct research outcomes, assessing either faculty qualifications and curriculum changes or student satisfaction and placement rates. The research work has been organized by only a limited number of researchers, who used a standardized evaluation system.

A scoping review (SCR) is therefore appropriate for this conceptually dispersed field, allowing identification of thematic concentrations, gaps, and patterns without restricting to effect sizes (Newman & Gough, 2020; Tricco *et al.*, 2018).

This study addresses three research questions:

RQ1: What is the state of service quality in Chinese VUE institutions across HEdPERF dimensions—academic competence, non-academic support, reputation, access, and program issues (Guo *et al.*, 2024; Mohammed *et al.*, 2023; Wati *et al.*, 2024)?

RQ2: What challenges exist in translating specialized vocational services (e.g., "double-qualified" faculty, high-fidelity simulations) into measurable student employability (Khaled *et al.*, 2014)?

RQ3: How does service quality influence graduate loyalty, and what mediating roles do organizational identification and professional success play under the S-O-R paradigm (Liu, 2024)?

By mapping empirical studies, policy frameworks, and institutional reports from 2019–2025, this review clarifies current conceptualizations of service quality. It identifies structural imbalances, contributing to debates on vocational higher education reform and applied institutional performance.

2 METHODS

2.1 Review design

This study employed a systematic scoping review to synthesize research on service quality within China's Vocational Undergraduate Education (VUE) sector. A scoping approach was selected because the field is relatively recent, methodologically heterogeneous, and conceptually dispersed. Rather than estimating effect sizes, the objective was to map how service quality is defined, measured, and linked to employability and loyalty outcomes across empirical and policy-oriented sources (Peters *et al.*, 2015).

The review followed the PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) extension for scoping reviews (PRISMA-ScR) to ensure transparency in search procedures, screening logic, and inclusion decisions (Page *et al.*, 2021; Tricco *et al.*, 2018). In accordance with scoping methodology, a formal risk-of-bias assessment was not conducted, as the purpose was evidence mapping rather than causal inference. The review period was restricted to 2019–2025 to align with the official launch

and pilot implementation phase of China's vocational undergraduate reform (Ministry of Education (MOE), 2019).

2.2 Data sources

To balance theoretical rigor and policy relevance, a dual-track retrieval strategy was implemented:

2.2.1 Academic databases

The study employed Web of Science (primary, due to its rigorous selection and citation tracking) and Scopus (supplementary, to avoid database-specific gaps) to access peer-reviewed research. Searches ran from January to February 2026. The strategy used three concept clusters: vocational undergraduate education (Gessler *et al.*, 2021); service quality (Bartolo & Tinmaz, 2024) and evaluation frameworks (including HEdPERF and SERVQUAL); and 11 Annual Quality Reports (2025 cycle) from Chinese provincial education departments and pilot VUE institutions, plus three national policy documents. The review was limited to China, used Boolean operators, and restricted results to English-language articles published between 2019 and 2025 (Table 1).

Table 1

Database Search Terms and Strategy (n=31)

Search Track	Sources	Search Logic & Keywords	Records
Track 1: Core Academic	Scopus, Web of Science	TS = ("Vocational Undergraduate") AND TS = ("Service Quality" OR "HEdPERF") +1	5
Track 2: Grey Articles	Academic Repositories	Empirical studies on VUE student development, employability, and skill premium +2	12
Track 3: Institutional Reports	Official University & Dept. Websites	Manual Retrieval: "[Province/School Name]" + "Annual Quality Report 2025" +4	11
Track 4: Policy Documents	Ministry of Education (MOE) & NPC	National guidelines for high-quality vocational development and VUE pilot white papers +2	3
Total	--	Final evidence base for synthesis	31

The researchers conducted searches between 2019 and 2025, using English-language articles with the document type "Article" as the search restriction for each journal published during that time (Table 1).

2.2.2 Grey literature and policy sources

In mainland China, VUE reform is basically policy-driven and subject to continuous institutional oversight. Therefore, relying solely on peer-reviewed academic databases would have resulted in an incomplete representation of the evidence landscape. Much of the operationalization of reform measures, quality assurance mechanisms, and performance monitoring occurs within governmental and institutional reporting structures rather than in journal publications. To address this structural limitation, grey literature was systematically incorporated into the review process (Adams *et al.*, 2017).

Researchers obtained grey literature from three main sources. Research included official educational department websites, university quality assurance systems, and national education policy databases. The selected sources served as official channels for the formal delivery of reform guidelines, evaluation criteria, and performance information. The search process became replicable because researchers documented all retrieval dates and access points, along with their selection choices, to create transparent research methods.

The process uncovered 11 Annual Quality Reports from the 2025 reporting cycle, along with three national policy frameworks that govern the implementation and assessment of VUE reform. The documents deliver vital contextual information, along with evaluation data, that academic publications cannot fully document, especially regarding performance metrics, regulatory compliance, and institutional accountability systems. The researchers maintained their analytical precision by including grey literature sources only after those sources met predefined assessment standards. The required authentication process required that all documents be verified through official government sources or certified institutional documents. The documents needed to include specific assessment criteria for their evaluation, rather than complete narrative descriptions. The study required researchers to report student achievement results, including employment success rates and faculty and staff educational credentials, and to

document program improvement metrics to maintain focus on the study's analytical objectives.

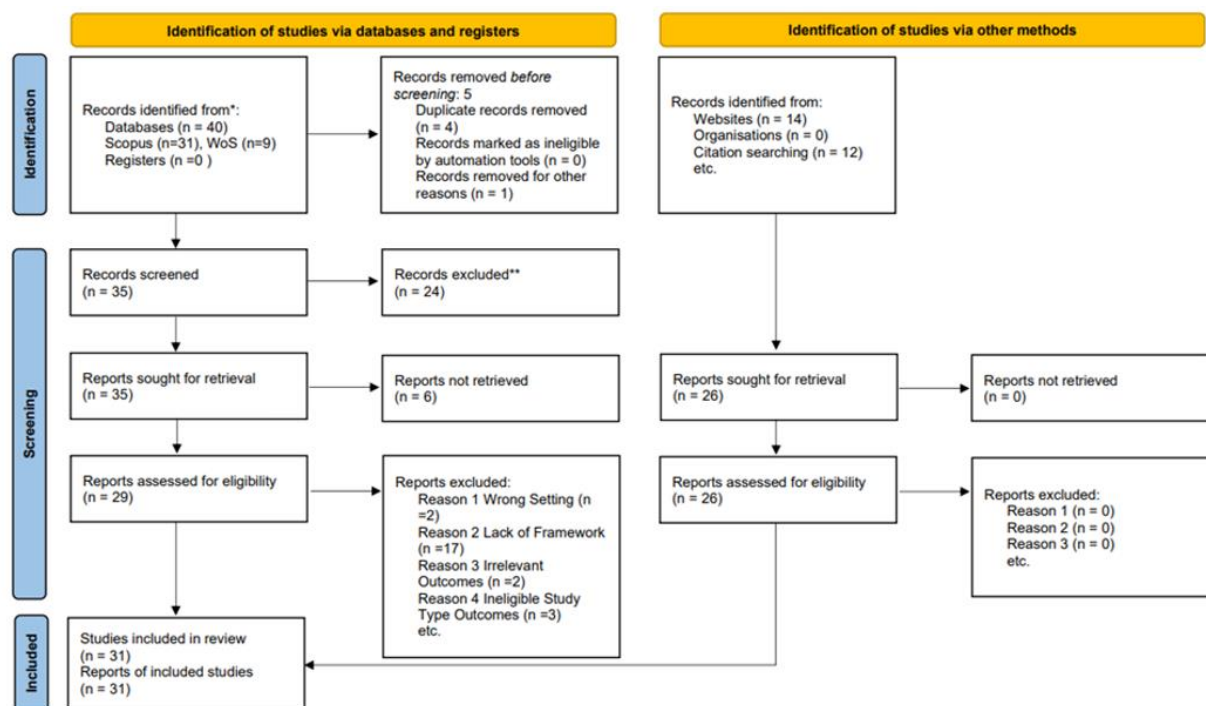
The research excluded non-empirical content, including opinion pieces, media summaries, and unsourced reports, because the study needed to follow the same evidentiary standards as peer-reviewed literature. The research method enabled the team to gather the necessary policy documents, while the research activities maintained their established standards.

2.3 Screening and selection procedures

The screening process followed a three-stage workflow (Figure 1).

Figure 1

PRISMA-ScR Flow Diagram of the Study Selection Process



Source: The Authors and adoption from McGowan *et al.* (2020) and Page *et al.* (2021).

Stage 1: Identification – Initial WoS/Scopus searches yielded a combined record pool. Duplicates were removed via DOI, title, author, and year matching. Grey literature was cataloged separately for source transparency (Adams *et al.*, 2017).

Stage 2: Title/Abstract Screening – Records were excluded if they focused on three-year (non-undergraduate) vocational colleges, addressed general higher education without vocational differentiation, discussed infrastructure/finance without service quality linkage, or lacked analytical framing.

Stage 3: Full-Text Eligibility – Full texts required: explicit reference to service quality frameworks or structured indicators, student-centered outcomes (employability, satisfaction, loyalty, reputation), and a clear VUE institutional context. A final count of 31 core records was reviewed, comprising peer-reviewed empirical studies, national policy documents, and provincial/institutional annual quality reports. All reflecting the operational VUE reform landscape, not purely academic discourse.

2.4 Inclusion and exclusion criteria

For studies to be included in the investigation, institutions had to be accredited Chinese VUE institutions. The study needed to use structured service quality models or indicators that examined student-centered outcomes. Finally, the studies had to be published between 2019 and 2025. Exclusion criteria included general universities without vocational focus, descriptive institutional summaries without analytical framework, opinion pieces, editorials, or non-verifiable reports. This ensured conceptual coherence. (Table 2).

Table 2*Conceptual Coherence*

Conceptual Coherence

Criterion	Inclusion Criteria	Exclusion Criteria
Institutional Setting	Accredited Vocational Undergraduate Institutions (VUE) in China.	Traditional 3-year vocational colleges or general academic universities without a vocational pilot focus (Reason 1: n=2).
Theoretical Framework	Adoption of structured service quality models (e.g., HEdPERF, SERVPERF) or established socio-psychological paradigms (S-O-R). +2	Descriptive narratives lacking a robust theoretical framework for service evaluation (Reason 2: n=17).
Research Outcomes	Focus on student-centered metrics (e.g., Perceived Employability, Student Loyalty, Institutional Reputation). +3	Irrelevant outcomes (e.g., campus infrastructure blueprints, basic financial budgeting) (Reason 3: n=2).
Study Type	Peer-reviewed empirical studies, national policy frameworks, or official annual quality reports (2019–2025). +2	Non-empirical commentaries, opinion pieces without data, or ineligible study types (Reason 4: n=3).

2.5 Data extraction and coding

The structured protocol created standardized coding for all records to identify their publication type through three options, their theoretical framework through seven specific frameworks, their service quality dimensions, and their outcome variables, which included employability, loyalty, satisfaction, reputation, and their research methodology through three research approaches of quantitative, qualitative, and mixed methods. The dual-reviewer protocol established inter-coder agreement by assessing a random subset of 10 records, which achieved a strong agreement level of Cohen's $\kappa = 0.82$ (Halpin, 2024), with the team resolving all discrepancies through discussion.

2.6 Analytical framework*2.6.1 HEdPERF as primary mapping lens*

The HEdPERF model (Mohammed *et al.*, 2023; Wati *et al.*, 2024) provided the principal categorization structure. Its five dimensions—academic aspects, non-academic aspects, program issues, access, and reputation—are classified as service quality

indicators. This framework was selected because it is higher-education-specific, distinguishes between instructional and administrative dimensions, and treats institutional reputation as measurable.

2.6.2 S-O-R interpretive structure

Outcome pathways were synthesized using the Stimulus–Organism–Response paradigm (Goi *et al.*, 2018), with service quality dimensions as Stimulus (Ravishankar *et al.*, 2024), perceived employability as Organism, and student loyalty as Response. This overlay integrated service inputs with cognitive and behavioral outcomes without overextending causal claims.

2.7 Evidence triangulation

The research used multiple sources, including peer-reviewed studies, policy documents, and institutional reports, to identify three research areas. Academic research provided the foundation for theoretical concepts, policy frameworks explained existing regulatory requirements, and institutional reports demonstrated how operations were carried out. The study used three sources of information to identify multiple sources of bias, which helped the researchers understand both theoretical concepts and the practical applications of VUE reform.

2.8 Methodological limitations

Limitations include the study's focus on English-language publications. This, therefore, excluded domestic Chinese-language papers. Institutional reports also vary in depth of reporting and in metric standardization. Moreover, as a scoping review, this study mapped evidence rather than evaluating causal strength. Despite these constraints, the structured screening and triangulated evidence base provide a coherent overview of service quality dynamics within the VUE reform period (Jie *et al.*, 2024).

3 RESULTS AND DISCUSSION

3.1 Overview of included evidence

The finalized collection contained 31 records from 2019 to 2025, including peer-reviewed studies, national policies, and institutional quality reports. About two-thirds of academic studies used quantitative surveys, while most of the remaining studies used qualitative or mixed-methods approaches. The institutional reports included descriptive metrics on faculty qualifications and employment outcomes, as well as program reform data. The studies used different combinations of instructional competence, internships, administrative services, employment rates, and reputation metrics to define service quality. The researchers used HEdPERF as a framework to conduct systematic comparisons.

3.2 Distribution of service quality dimensions (RQ1)

3.2.1 *Academic aspects*

The most common indicators (28/31 records, 90.3%) measured faculty qualifications through their dual-degree teachers, their ability to match industry standards, their teaching methods, their digital teaching methods, and their lab and simulation facilities. The policy documents specified faculty requirements which needed professors to hold both academic degrees and professional credentials. The institutional reports showed how "dual-teacher" development and enterprise secondments created professional growth opportunities. Research studies have established a connection among teaching effectiveness, student satisfaction, and students' self-perceived ability to learn. The primary goal of the reform is to enhance teaching quality by establishing instructional credibility.

3.2.2 Program issues

Program design appeared as a theme in 25 records (80.6%). Unlike academic issues (individual teaching), program issues focus on structural features: structured internships, industry–university platforms, credit for practical training, and certification pathways. Studies found that long-duration internships and enterprise mentorship boosted post-graduation confidence (Appiah-Kubi *et al.*, 2025). Institutional reports noted the expansion of cooperative enterprises and joint training bases. In vocational education, program design serves as a labor-market signaling mechanism, signaling graduates' skills to employers.

3.2.3 Reputation

Reputation appeared in 19 of 31 records (61.3%). Unlike elite universities, vocational institutions build reputation on employment outcomes, not historical prestige. Indicators included graduate employment rates, employer satisfaction, visibility of industry partnerships, and regional labor-market integration. Institutional reports showed employment statistics above provincial averages. Empirical studies measured reputation through students' reports of employers' degree recognition. VUE's reputation is performance-driven, not legacy-based.

3.2.4 Non-academic aspects

Present in 14 of 31 records (45.2%). Indicators included administrative responsiveness, career counseling, student support systems, and campus resources. Studies found moderate associations between non-academic services and student satisfaction, but these services were rarely central to employability outcomes – they were treated as supplementary. The lower frequency suggests that VUE institutions currently prioritize instructional reform over administrative service innovation.

3.2.5 Access

Present in 9 records (29.0%). Indicators: ease of communication, procedural transparency, and timeliness of information. Few studies treated access as a primary determinant of outcome. Institutional reports noted some process optimization (e.g., internship placement coordination). Limited emphasis suggests reform prioritizes structural upgrading over service-interface efficiency.

3.2.6 Dimensional imbalance

The distribution shows a pronounced concentration on instructional/structural components of service quality, with limited attention to administrative accessibility and student-service interfaces. This imbalance suggests a strongly supply-side quality narrative, emphasizing curriculum legitimacy and industrial alignment. Thematic saturation analysis confirms non-uniform development of service quality in the VUE sector (Table 3, Figure 2).

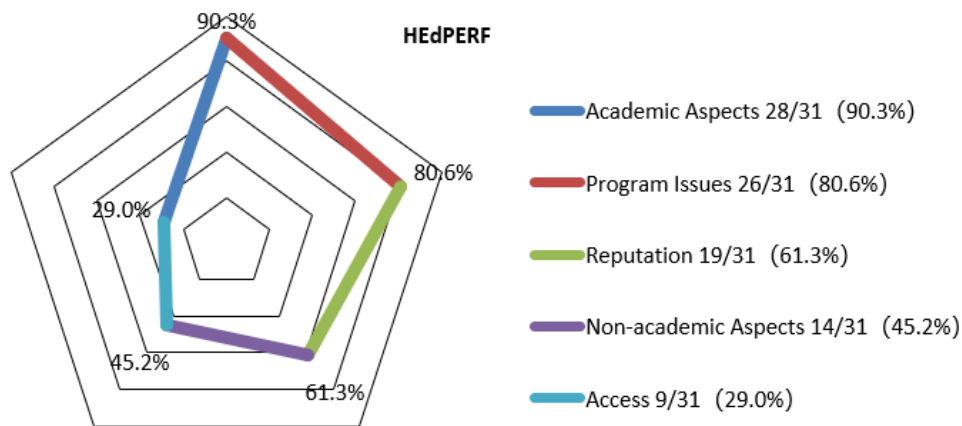
Table 3

Saturation and Frequency of HEdPERF Dimensions (n=31)

HEdPERF Dimension	Records	%	Primary Evidence Source	Saturation Level
Academic Aspects	28	90.30%	Academic Papers & 2025 Quality Reports	High
Program Issues	25	80.60%	Policy Frameworks & Internship Studies	High
Reputation	19	61.30%	Grey Literature & Student Development Models	Moderate
Non-academicNon-academic Aspects	14	45.20%	Institutional Quality Reports	Moderate
Access	9	29.00%	Qualitative Interviews & Thematic Studies	Low

Source: Calculated from the integrated evidence corpus [R1]–[R31]

As shown in the HEdPERF Evidence Radar Map (Figure 2), research skews heavily toward internal pedagogical inputs, while external administrative and social dimensions remain peripheral.

Figure 2*HEdPERF Evidence Radar Map*

Source: The Authors

3.3 Service quality & perceived employability (RQ2)

Studies defined employability in three ways: job-seeking confidence, skill-market fit, and professional identity. Quantitative work linked teaching quality and relevant curricula to perceptions of employability. Dual-qualified faculty, realistic lab simulations, and enterprise co-teaching improved job readiness. Structured internships gave students a clearer career picture, especially in fields like digital manufacturing. In short, program positioning directly shapes employability.

3.4 Indirect effects & student loyalty (RQ3)

Few studies have found a direct link between service quality and loyalty. Instead, perceived employability bridged the two. Loyalty was measured by recommendation intent, re-enrollment willingness, and alumni advocacy. High graduate employment rates boosted student advocacy – a good job proves the school's value. However, administrative hassles (like internship delays) weakened loyalty even when teaching was strong. The pathway: academic and program quality → perceived employability → loyalty. Non-academic factors are moderators, not primary drivers.

3.5 Reframing service quality in applied HE

The focus on academic/program aspects reflects VUE reform's need for curriculum rigor and industry collaboration. However, this supply-side bias prioritizes structural indicators (faculty qualifications, employment rates) over relational service quality. While appropriate for early reform, this imbalance may become a vulnerability as student expectations diversify. Non-academic services (administrative transparency, communication) shape perceptions of professionalism but remain underexamined.

3.6 Employability as mediating construct

Unlike prestige-driven universities, VUE contexts exhibit a pragmatic evaluation: students interpret service quality in terms of expected labor-market returns. Curriculum alignment and industry immersion signal employment success. The service–employability–loyalty pathway builds reputation through performance legitimacy. Risks: Overemphasis on short-term placement may narrow competencies; future models need dynamic employability measures.

3.7 Role of administrative accessibility

Though less studied, administrative inefficiencies (e.g., internship coordination) reduce loyalty despite strong instruction. Functional quality matters alongside technical quality. As VUE scales, investment in responsive administrative systems is needed to avoid operational friction that undermines teaching improvements.

3.8 Implications for service quality theory

HedPERF dimensions vary by institution type. In VUE, reputation derives from employability, not prior prestige. Integrating HedPERF with S-O-R clarifies the cognitive pathway: employability perceptions serve as the organism-level evaluation in vocational settings, expanding S-O-R to applied education.

3.9 Policy-level considerations

VUE reform has successfully strengthened academic legitimacy and industry ties. Next priorities: standardizing service quality indicators, transparent employability metrics, administrative digitalization, and student feedback mechanisms. Balance across HEdPERF dimensions enhances long-term resilience.

3.10 Research gaps & future directions

Gaps include: limited longitudinal evidence, underexplored regional variation within China, inconsistent measurement (need for VUE-specific instrument), and few employer perspectives. The service–employability–loyalty pathway offers a model for future testing.

4 CONCLUSIONS

This review of 31 studies (2019–2025) on China's VUE service quality finds that quality is framed around academic and program inputs, with less attention to administration and student support. VUE environments operate through a performance-oriented pathway: teaching excellence, dual-qualified faculty, and hands-on learning shape perceptions of employability, which in turn drive student loyalty—unlike prestige-based models. Employability is the key mediator linking resources to outcomes. The study combines HEdPERF and S-O-R to present a context-specific model for applied HE. The service–employability–loyalty framework shows how quality dimensions interact. VUE reform has improved educational standards and strengthened industry partnerships, but a greater focus on administrative functions is needed to further develop the program.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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