Outcome-Based Education in Chinese Higher Education: Reform Translation, Implementation Tensions and International Comparisons

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Abstract

Purpose - Outcome-Based Education (OBE) has become a major reform language in Chinese higher education, especially in programme accreditation, undergraduate teaching review, applied undergraduate transformation and internal quality assurance. This article examines how OBE has been translated within China's policy-steered higher education system and compares that trajectory with major international outcome-oriented frameworks.

Design/methodology/approach - The study adopts comparative policy analysis and integrative literature synthesis. A purposive analytical corpus of 46 core sources was assembled from peer-reviewed literature, publisher databases, Google Scholar, ERIC and official accreditation or quality-assurance websites. The synthesis prioritises sources published between 2020 and 2026, while retaining foundational works on OBE, constructive alignment, feedback, assessment validity and comparative policy translation. The analysis is organised around governance driver, outcome architecture, curriculum alignment, assessment evidence, stakeholder participation, continuous improvement and future-readiness.

Findings - The analysis identifies Chinese OBE reform as a policy-steered translation process moving through three overlapping stages: formal alignment, evidence construction and learning enhancement. Chinese universities have advanced most visibly in formal alignment through programme outcomes, curriculum maps and accreditation documentation. Evidence construction is developing through attainment calculation, rubrics, capstones, portfolios and digital platforms, but remains vulnerable where assessment validity, student agency, disciplinary translation and responsible data governance are weak. Learning enhancement is therefore the decisive frontier of next-generation OBE reform in China.

Originality/value - The article develops a compliance-to-enhancement model of Chinese OBE reform and positions China against accreditation-led, qualification-framework-led and quality-enhancement-led models of outcome-oriented reform. It contributes to comparative higher education research by showing that large-scale policy mobilisation can accelerate OBE diffusion, but educationally valid improvement depends on assessment evidence, disciplinary ownership, student participation and teacher-led curriculum judgement.

Keywords: Outcome-Based Education; Chinese higher education; quality assurance; curriculum reform; accreditation; policy translation; curriculum intelligence

1. Introduction

Outcome-Based Education (OBE) has become one of the most widely circulated reform languages in contemporary higher education. Its basic proposition is straightforward: curriculum design should begin with the capabilities that students are expected to demonstrate, and teaching, assessment and quality assurance should be aligned with those capabilities. In practice, however, OBE is not a neutral technical model. It becomes meaningful only when it is translated through institutional governance, disciplinary cultures, assessment traditions and local understandings of what higher education is for (Biggs, 1996; Spady, 1994; Syeed et al., 2022).

China is a significant case for examining this translation. The country has moved from an expansion-oriented higher education agenda to a quality-oriented agenda in which graduate competence, disciplinary relevance, technological innovation and national development are increasingly connected. The recent

blueprint for building a strong education system by 2035 emphasises high-quality development, discipline adjustment and the contribution of higher education to national strategic needs (State Council of the People's Republic of China, 2025). Quality assurance research similarly shows that China's higher education policies have shifted toward more explicit evaluation, accountability and improvement mechanisms (Liu et al., 2025).

Within this environment, OBE has diffused rapidly. Engineering education accreditation has been its most visible institutional carrier, because graduation requirements, curriculum support matrices, course-outcome attainment and continuous improvement are central to accreditation practice (China Association for Science and Technology, 2025; Wu, 2024). OBE has also entered new engineering reform, applied undergraduate transformation, teacher education certification and institutional teaching-quality review. This expansion makes China a useful site for asking how a globally recognised reform idea is reassembled within a state-steered higher education system.

The problem is that diffusion does not guarantee transformation. Many universities can now produce technically complete OBE documents: programme outcomes, curriculum maps, course objectives, attainment tables and annual improvement reports. These documents matter, but they are insufficient. A programme may appear aligned while students experience fragmented courses, poorly designed assessment, limited feedback and little understanding of the standards against which they are judged. The central issue is therefore not whether China has adopted OBE, but whether OBE has moved from formal alignment to credible evidence and learning enhancement.

Existing research has made important contributions, but it remains fragmented. Some studies focus on OBE models, attainment calculation and engineering education accreditation (Almuhaideb & Saeed, 2020; Amirtharaj et al., 2022; Hu et al., 2023; Yuan et al., 2024). Others examine quality assurance, big data and China's higher education policy change (Liu et al., 2025; Zhang et al., 2022). Less attention has been given to the comparative policy question: how does OBE travel into China, what tensions emerge in its institutional translation, and what can China learn selectively from international frameworks without reducing reform to policy borrowing?

This article addresses that gap through three research questions. First, through what policy and institutional mechanisms has OBE been translated into Chinese higher education reform? Second, how does China's policy-steered OBE model compare with major international quality assurance, accreditation and qualification frameworks? Third, what reform agenda can move Chinese OBE from compliance-oriented implementation toward evidence-informed learning enhancement?

The article's central claim is that Chinese OBE reform should be understood not as a linear adoption of international standards, but as a policy-steered translation process in which external comparability, domestic quality governance, professional accreditation and institutional accountability are negotiated within universities. This interpretation clarifies why OBE can be institutionally visible yet pedagogically uneven. Figure 1 summarises the argument by distinguishing three overlapping stages: formal alignment, evidence construction and learning enhancement.

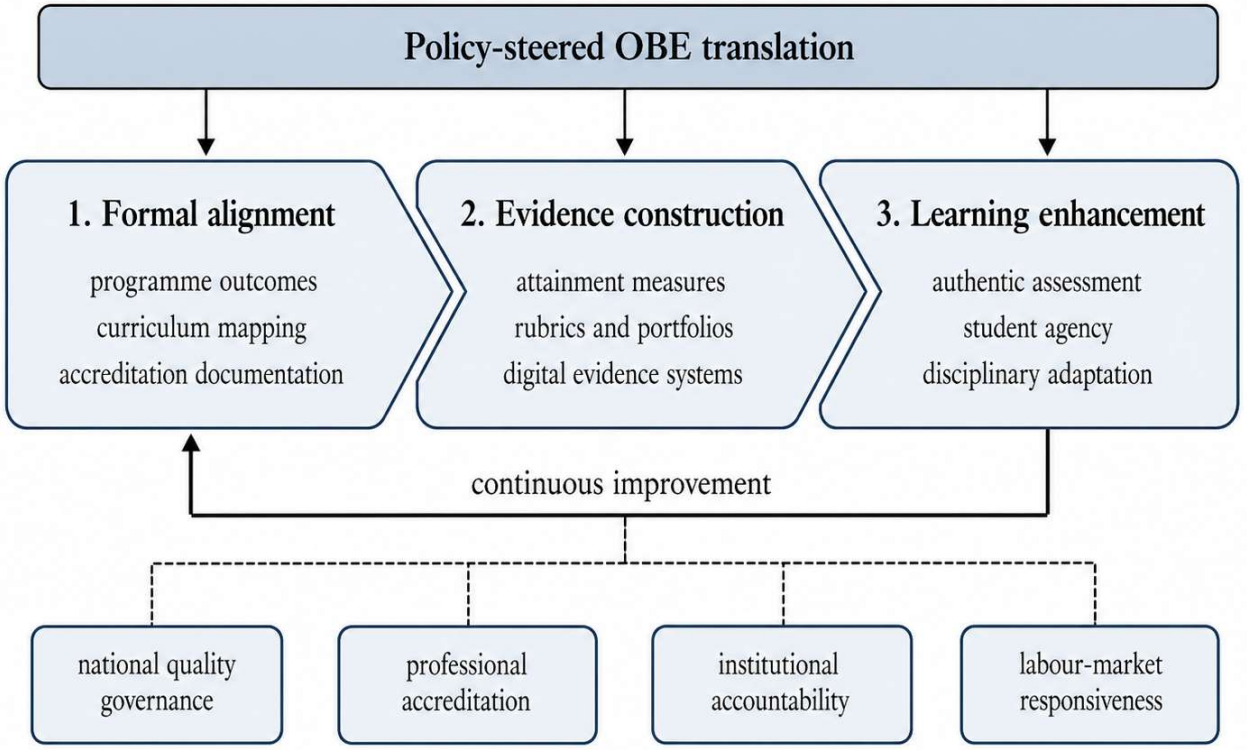

Figure 1. A three-stage model of policy-steered OBE translation in Chinese higher education

Source: Authors' synthesis based on Biggs (1996), Spady (1994), ABET (2025), International Engineering Alliance (2021), Sarkar and Kurup (2023), Steiner-Khamsi (2016), Liu et al. (2025) and Zhang et al. (2022).

Figure 1 deliberately separates institutional adoption from pedagogical transformation. Policy steering can initiate formal alignment, but learning enhancement requires programme teams to turn outcome statements into defensible assessment evidence, discipline-sensitive standards and student-facing improvement. The distinction matters because an OBE system may look complete on paper while remaining educationally thin in practice.

2. Literature Review and Analytical Framework

2.1. OBE, constructive alignment and educational validity

OBE begins from a backward design premise: define the intended learning outcomes, design learning activities that enable students to achieve them, and assess whether they have been achieved. Spady's (1994) formulation made outcomes the organising point of education. Biggs's (1996) constructive alignment sharpened this idea by linking intended learning outcomes, teaching and learning activities, and assessment tasks. In contemporary higher education, the two ideas are often used together: outcomes clarify the intended destination, while constructive alignment asks whether the route, evidence and standards are coherent.

The educational value of OBE depends on validity. An outcome can be formally well written but weakly assessed. A rubric can be detailed but unable to distinguish superficial performance from genuine disciplinary judgement. An attainment score can be mathematically precise while being educationally thin. For this reason, recent OBE scholarship increasingly treats assessment validity, feedback and evaluative judgement as central rather than secondary concerns (Amirtharaj et al., 2022; Bearman et al., 2020; Boud & Molloy, 2013; Tai et al., 2018).

This point is important for China because the rapid institutionalisation of OBE has made curriculum maps and attainment calculations highly visible. These tools are useful when they prompt programme teams to examine student work and make curriculum decisions. They are much less useful when they become evidence of compliance detached from the actual quality of student learning.

2.2. OBE as travelling reform and policy translation

OBE is often presented as a technical framework, but it also functions as a travelling reform idea. When reform ideas move across national systems, they are not simply copied. They are reinterpreted through governance traditions, administrative routines, professional cultures and local legitimacy demands (Steiner-Khamsi, 2016; Steiner-Khamsi & Waldow, 2012). Sarkar and Kurup (2023) therefore describe OBE as a Janus-faced travelling theory: it can support meaningful reform, but it can also become an accountability vocabulary that narrows educational purposes.

The concept of policy-steered translation used in this article refers to a reform process in which global OBE principles are reworked by China's state-led quality governance, professional accreditation, institutional teaching review and labour-market responsiveness. This perspective shifts the analytical question from whether China has adopted OBE correctly to how OBE has been reassembled within China's quality-governance system.

A policy-translation lens also guards against simplistic international comparison. ABET, the Washington Accord, the European Higher Education Area, the UK Quality Code, the Australian Qualifications Framework and the Malaysian Qualifications Framework all use learning-outcome language, but they do so through different institutional arrangements. The comparative task is therefore to identify governance logics and implementation tensions rather than to rank systems as more or less advanced.

2.3. Accreditation, qualification frameworks and graduate attributes

The international diffusion of OBE has been strengthened by accreditation and qualification frameworks. ABET's criteria require programmes to define student outcomes, assess and evaluate the extent to which those outcomes are attained, and use results for continuous improvement (ABET, 2025). The International Engineering Alliance (2021) provides graduate attributes and professional competencies that support substantial equivalence across engineering accreditation systems. These frameworks have influenced engineering education worldwide, including China.

Beyond engineering, learning outcomes are embedded in regional and national quality frameworks. The European Higher Education Area links learning outcomes with ECTS, student-centred learning, flexible pathways and quality assurance (European Commission, 2015; European Commission/EACEA/Eurydice, 2024; ENQA et al., 2015). The UK Quality Code connects academic standards, assessment, student support and quality enhancement (Quality Assurance Agency for Higher Education [QAA], 2024). The Australian Qualifications Framework and the Malaysian Qualifications Framework organise qualification levels through outcome descriptors and domains (Australian Qualifications Framework Council, 2013; Malaysian Qualifications Agency, 2024).

These frameworks show that OBE is not limited to a single discipline or country. Yet they also show that outcomes acquire different meanings depending on whether they are attached to professional accreditation, qualification architecture, student-centred learning, institutional accountability or national policy steering.

2.4. Future-oriented outcomes, student agency and social value

OBE reform is increasingly connected with future-oriented capabilities. The OECD Learning Compass 2030 frames education around student agency, transformative competencies and the ability to create new value (OECD, 2019). SDG-oriented higher education research similarly argues that learning outcomes should include sustainability, social responsibility and long-term capability development rather than only narrow employability (Mahrishi et al., 2025; Saini et al., 2023).

Recent Chinese evidence reinforces this broader interpretation. Zhang (2026), in a study of sustainability-oriented teaching in vocational and applied higher education, shows that students' social value outcomes are closely associated with intrinsic motivation, programme relevance and commitment to learning. This finding is relevant to OBE because it suggests that outcome-oriented curriculum reform should not stop at measurable technical competence. It should also attend to students' internalisation of social value, responsible employability and learning commitment.

Generative AI adds a further layer of complexity. It makes some conventional assessments less reliable as evidence of learning, while also creating opportunities for formative feedback, adaptive support and curriculum diagnosis (Bearman et al., 2024; Crompton & Burke, 2023; UNESCO, 2023; Weng et al., 2024). OBE in the AI era therefore requires a stronger relationship between assessment design, student agency, digital evidence governance and human academic judgement.

Table 1 consolidates the core constructs used in this article and clarifies how each construct is operationalised in Chinese higher education. It also identifies the main risk attached to each construct and the enhancement move needed to prevent OBE from becoming administrative routine.

Table 1. Core OBE constructs and their operational meaning in Chinese higher education

Construct	**Theoretical meaning**	**Chinese operationalisation**	**Implementation risk**	**Enhancement move**
Programme learning outcomes	Statements of the knowledge, skills, values and judgement expected of graduates	Graduation requirements, programme objectives and competence indicators	Template-based outcomes detached from programme identity	Co-design outcomes with faculty, students, alumni, employers and external experts
Constructive alignment	Coherence among outcomes, learning activities and assessment	Curriculum maps, course-outcome matrices and syllabus alignment	Alignment remains documentary while pedagogy remains unchanged	Verify alignment through student work, moderation and course redesign
Assessment validity	Evidence that assessment tasks represent the intended capability	Attainment scores, rubrics, capstones, portfolios and examination analysis	Numerical precision masks weak evidence quality	Use authentic tasks, rubric calibration and triangulated evidence
Continuous improvement	Use of evidence to revise curriculum, teaching and support	Annual programme review, accreditation self-study and quality reports	Closed-loop language without follow-up decisions	Document specific actions, responsibilities, timelines and second-cycle evidence
Student agency	Students understand standards and participate in learning improvement	Surveys, feedback systems, advising and learning support	Students become data providers rather than partners	Develop feedback literacy, portfolio reflection and student participation in review
Curriculum intelligence	Evidence-informed curriculum decision-making supported by professional judgement	Teaching dashboards, learning analytics and AI-assisted evaluation	Datafication and automated compliance	Govern digital evidence ethically and interpret data through faculty-led review

Note. Authors' synthesis based on Spady (1994), Biggs (1996), Boud and Molloy (2013), Tai et al. (2018), ABET (2025), Amirtharaj et al. (2022), QAA (2024), UNESCO (2023), Lin and Zhang (2025), Zhang et al. (2022) and Zhang (2026).

3. Methodology

3.1. Research design

This article uses a comparative policy analysis combined with an integrative literature synthesis. The design is appropriate because the aim is not to estimate the causal effect of OBE implementation, but to interpret how OBE has been translated into Chinese higher education and how this translation compares with international quality assurance frameworks. Integrative reviews are particularly useful when a topic spans conceptual, policy and empirical literatures and when the objective is to generate a coherent analytical framework rather than a statistical meta-analysis (Snyder, 2019).

The analysis treats OBE as a reform object that operates simultaneously at three levels: policy discourse, institutional quality assurance and classroom assessment. This multi-level reading is necessary because the same term—outcome orientation—can refer to national graduate-quality goals, programme accreditation indicators, course learning outcomes, assessment rubrics or student feedback practices.

3.2. Source identification and selection

Sources were identified through publisher databases, ERIC, Google Scholar, official websites of accreditation and quality assurance agencies, and targeted searches of China-related higher education policy materials. The main source identification and verification were conducted during May-June 2026. Search strings combined "outcome-based education" OR "OBE" with "higher education", "China", "quality assurance", "accreditation", "curriculum mapping", "graduate attributes", "assessment validity", "student-centred learning", "generative AI" and "policy translation".

The review prioritised peer-reviewed studies and official policy or quality-assurance documents published between 2020 and 2026. Classic works were retained when they defined concepts that remain foundational, such as OBE, constructive alignment, feedback design, evaluative judgement and policy borrowing. Sources were included when they addressed at least one of seven dimensions: governance driver, outcome architecture, curriculum alignment, assessment evidence, stakeholder participation, continuous improvement and future-readiness. Sources were excluded when they focused only on school education, corporate training, isolated classroom techniques without quality-assurance relevance, or policy commentary without sufficient conceptual or institutional value.

The final analytical corpus comprised 46 core sources. It is not presented as a statistically exhaustive systematic review sample. It was assembled through purposive and iterative selection in order to cover foundational OBE theory, international quality-assurance frameworks, China-specific higher education policy research, assessment validity literature, student feedback and agency, and recent work on digital evidence and AI-supported assessment. The design therefore prioritises analytical breadth, conceptual relevance and source authority over bibliometric exhaustiveness.

Table 2. Review protocol and analytical corpus for the comparative synthesis

Protocol item	Implementation in this study	Illustrative sources	Analytical use
Search period	Main identification and verification during May-June 2026; recent literature prioritised for 2020-2026	Recent OBE, AI-assessment and China QA literature	Ensures recency while retaining classic conceptual anchors
Search locations	Publisher pages, ERIC, Google Scholar and official accreditation or QA websites	ABET, IEA, EHEA, QAA, AQF, MQA and Chinese policy sources	Combines peer-reviewed scholarship with authoritative frameworks
Core search terms	OBE, outcome-based education, higher education, China, quality assurance, accreditation, curriculum mapping, graduate attributes,	Syeed et al. (2022); Sarkar and Kurup (2023); Liu et al. (2025)	Locates literature across pedagogy, policy and quality assurance

Protocol item	Implementation in this study	Illustrative sources	Analytical use
	assessment validity, generative AI, policy translation		
Inclusion criteria	Higher education relevance; conceptual or empirical value for at least one analytical dimension; official status for policy frameworks	Spady (1994); Biggs (1996); Almuhaideb and Saeed (2020); Wu (2024)	Builds a coherent analytical corpus rather than a broad list of mentions
Exclusion criteria	School-only studies, corporate training, non-substantive OBE commentaries and sources without relevance to QA or assessment evidence	N/A	Protects the focus of the synthesis
Final corpus	46 core sources: foundational theory, assessment literature, international frameworks, China-specific studies and digital evidence sources	Zhang et al. (2022); Zhang (2026); Lin and Zhang (2025); Zhang and Li (2025a, 2025b, 2025c)	Supports comparative interpretation and reform-agenda development

Note. The corpus was assembled for integrative synthesis rather than statistical meta-analysis. It prioritises conceptual relevance, source authority and recency while retaining classic references where necessary.

3.3. Coding and comparative synthesis

The analysis proceeded through three rounds of coding. In the first round, sources were coded descriptively for their treatment of outcomes, curriculum alignment, assessment evidence, continuous improvement, student-centred learning, accreditation, qualification frameworks and digital evidence. In the second round, these codes were grouped into seven analytical dimensions: governance driver, outcome architecture, curriculum alignment, assessment evidence, stakeholder participation, continuous improvement and future-readiness. In the third round, the dimensions were compared across China and selected international frameworks.

The synthesis generated three analytical propositions. First, Chinese OBE is best understood as policy-steered rather than only accreditation-led. Second, current reform is unevenly distributed across formal alignment, evidence construction and learning enhancement. Third, the next stage of reform depends on assessment validity, disciplinary translation, student agency and responsible digital evidence.

3.4. Methodological limitations

This article has two limitations. First, it is not a systematic review with a claim of exhaustive database coverage. Its contribution lies in conceptual integration and comparative policy interpretation. Second, it does not collect primary data from universities. The proposed framework should therefore be treated as an analytical model for future empirical work rather than as a direct measurement of implementation effects. These limitations are addressed in the future research agenda in Section 8.

4. OBE Reform Practices in Chinese Higher Education

4.1. Policy steering and the quality-development agenda

OBE has entered Chinese higher education through a policy environment that gives strong weight to quality development, discipline adjustment, institutional accountability and national strategic needs. The 2035 education blueprint stresses the building of a high-quality education system and the alignment of higher education with scientific and technological development (State Council of the People's Republic of China, 2025). This matters because outcomes in China are not only programme-level teaching targets. They are also connected with graduate quality, national competitiveness, regional development and institutional evaluation.

Quality assurance research confirms this policy direction. Liu et al. (2025) show that China's external quality assessment schemes have evolved through successive policy waves and that quality assurance has become a central mechanism of higher education governance. The Ministry of Education's continuing

attention to undergraduate programme accreditation and approval also reinforces the institutional environment in which universities are expected to justify programme relevance, curriculum design and graduate outcomes (Ministry of Education of the People's Republic of China, 2025).

Undergraduate teaching review and evaluation has further generalised the language of student-centredness, outcome orientation and continuous improvement across institutions. This is important because OBE in China is no longer restricted to engineering accreditation. It has become part of a broader quality vocabulary through which universities describe curriculum design, graduation-requirement attainment, teaching-quality monitoring and internal review. The strength of this policy environment is diffusion capacity. The risk is that compliance may become a substitute for professional curriculum judgement.

4.2. Engineering accreditation and the institutionalisation of OBE

Engineering education is the strongest institutional carrier of OBE in China. Engineering accreditation links domestic programme quality with international graduate-attribute expectations and encourages universities to define training objectives, graduation requirements, curriculum support relationships, course outcomes, assessment methods and continuous-improvement procedures (International Engineering Alliance, 2021; Wu, 2024). Recent reporting indicates that thousands of engineering programmes in Chinese universities have been accredited, which illustrates the scale at which the accreditation language has spread (China Association for Science and Technology, 2025).

The advantage of engineering accreditation is that it has created a disciplined infrastructure for OBE. Programme teams are required to articulate outcomes, map courses and collect evidence. Continuous-improvement studies in Chinese engineering education also show growing attention to graduation-requirement achievement and questionnaire-based or evidence-based diagnosis (Chen et al., 2023; Hu et al., 2023).

The weakness is that the infrastructure can be misread as the reform itself. A support matrix can show which courses address which outcomes, but it cannot prove that students have developed professional judgement. An attainment score can indicate performance against selected items, but it cannot by itself demonstrate design capability, ethical reasoning or teamwork. Engineering accreditation has therefore built the strongest OBE platform in China, but it also reveals the general risk of documentary alignment.

4.3. New engineering, applied undergraduate transformation and employability

OBE intersects with China's new engineering and applied undergraduate transformation agendas. New engineering seeks to respond to digitalisation, industrial restructuring, interdisciplinary problems and emerging technologies (Zhuang & Xu, 2018). In this context, OBE provides a language for connecting curriculum design with problem-solving, innovation, collaboration and practice-based learning.

Applied undergraduate transformation broadens OBE beyond engineering. In applied universities, the outcome question is often framed through employability, workplace competence, industry collaboration and regional development. This can be valuable when it generates authentic assessment, internships, employer feedback and project-based learning. It becomes narrow when employability is reduced to short-term job matching rather than responsible professional formation.

Zhang's (2026) findings on sustainability-oriented teaching are useful here because they shift the discussion of applied higher education outcomes beyond immediate employability. Motivation, programme relevance, learning commitment and social value outcomes are not decorative additions to competence-based education; they shape whether students internalise the purposes of their programmes. In a related organisational register, Zhang and Li (2025c) argue that green transformation becomes consequential only when it is embedded in strategy rather than treated as a compliance label. For OBE, the implication is that responsible employability must be designed into curriculum, assessment and feedback, not appended to programme rhetoric.

4.4. Teacher education, humanities and social sciences: disciplinary translation

The transfer of OBE beyond engineering and applied professional programmes requires careful disciplinary translation. Teacher education can assess lesson design, classroom interaction, practicum

performance, mentoring feedback and reflective judgement. Humanities and social sciences require evidence of interpretation, argumentation, ethical reasoning, research literacy and public communication. Arts and creative disciplines require attention to process, aesthetic judgement, critique, authorship and risk-taking. If these domains simply import engineering-style matrices, OBE loses academic legitimacy.

Discipline-sensitive evidence is therefore essential. Table 3 contrasts common reform scenes in China and identifies the kinds of outcome evidence most appropriate to each scene. The purpose is to show that OBE is not a single template. It is a principle of alignment that must be interpreted through disciplinary epistemology.

Table 3. Chinese OBE reform scenes and discipline-sensitive outcome evidence

Reform scene	OBE mechanism	Appropriate evidence	Main risk	Improvement priority
Engineering accreditation	Graduation requirements, curriculum support matrix and continuous improvement	Capstone design, laboratory work, project reports, prototype evidence and calibrated rubrics	Attainment calculation substitutes for judgement	Strengthen moderation, authentic design evidence and second-cycle improvement
New engineering	Interdisciplinary and industry-facing problem-solving	Industry projects, digital artefacts, interdisciplinary cases and team-based design outputs	Policy slogan outpaces curriculum capacity	Embed cross-disciplinary supervision and problem-based assessment
Applied undergraduate reform	Employability, work-integrated learning and regional industry relevance	Internship portfolios, employer feedback, workplace tasks and reflective reports	Employability narrowed to short-term job skills	Include responsible employability, social value and learning commitment
Teacher education certification	Professional standards and teaching competence	Lesson plans, practicum observation, microteaching, classroom analysis and reflective journals	Checklist evaluation of complex professional practice	Use classroom evidence, mentor feedback and developmental portfolios
Humanities and social sciences	Critical reasoning, interpretation and civic understanding	Research essays, oral defence, policy briefs, field reports and archival analysis	Over-measurement of interpretive learning	Define outcomes around disciplinary judgement and public reasoning
Arts and creative disciplines	Creative process, aesthetic judgement and authorship	Portfolios, process books, critiques, exhibitions and artist statements	Reduction of creativity to generic indicators	Assess process, critique, risk-taking and reflective authorship

Note. Authors' synthesis based on Biggs (1996), Tai et al. (2018), Chen et al. (2021), Hu et al. (2023), Yuan et al. (2024), Wu (2024) and Zhang (2026).

4.5. Curriculum mapping and the evidence problem

Curriculum mapping is one of the most visible forms of OBE implementation in Chinese universities. It helps programme teams ask whether course sequences, credits, assessment tasks and practical components actually support graduation requirements. When used well, mapping reveals gaps, redundancies and weak transitions between foundational, advanced and integrative learning.

The weakness is often found at the level of evidence. Many OBE systems compute attainment by linking course scores to outcome indicators. This procedure is useful only if the underlying assessment tasks are valid. If the tasks are poorly aligned, if rubrics are vague, or if teachers interpret standards differently, attainment calculation creates a false sense of precision. Duan et al. (2023) show that CIPP-informed evaluation can

extend OBE beyond simple attainment calculation by connecting inputs, processes, outputs and feedback, but such models still depend on the quality of evidence and the willingness of programme teams to act on it.

While Figure 1 summarises the macro-stage movement of Chinese OBE reform, Figure 2 narrows the lens to the institutional mechanism through which policy expectations are translated into curriculum and assessment practice. The figure clarifies that national strategy and external quality assurance can influence student learning only through a series of interpretive steps: institutional positioning, programme outcomes, curriculum maps, teaching design, assessment evidence and curriculum improvement.

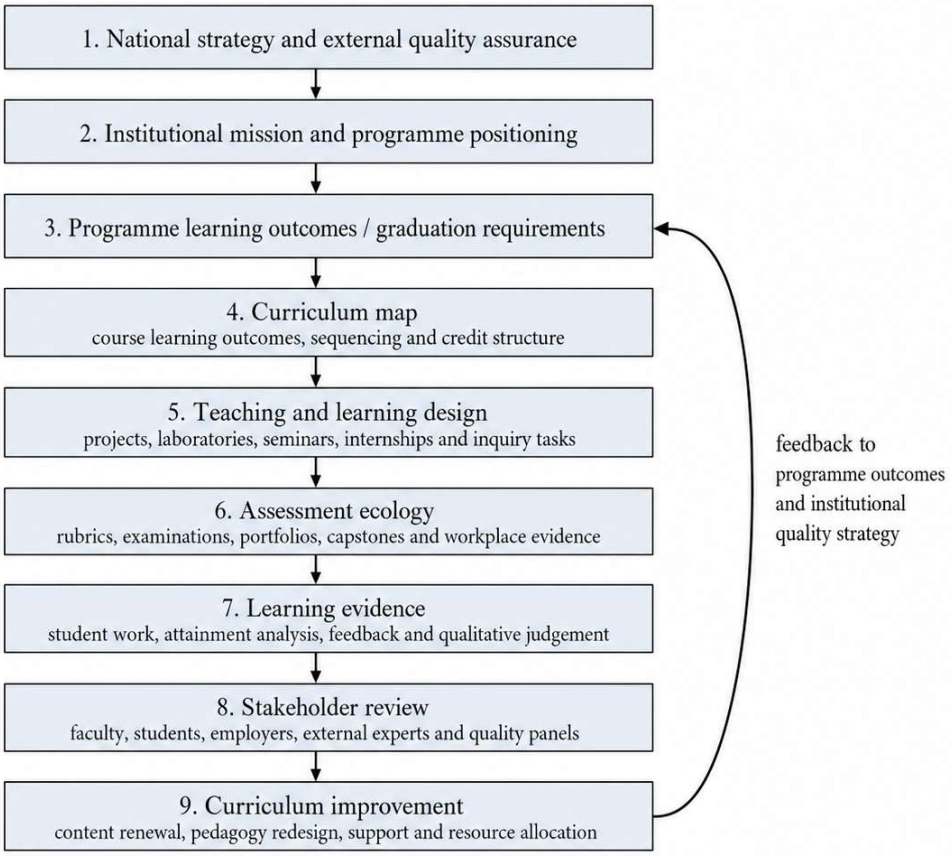

Figure 2. Policy-to-practice translation chain in Chinese higher education

Source: Authors' synthesis based on ABET (2025), Biggs (1996), Duan et al. (2023), QAA (2024), Zhang et al. (2022) and Liu et al. (2025).

Figure 2 makes the implementation challenge visible. A weakness at any point in the chain can break the learning-improvement logic. If programme outcomes are generic, mapping becomes symbolic. If teaching design is unchanged, outcomes become rhetorical. If assessment evidence is weak, improvement decisions have no reliable basis. The chain therefore makes clear why OBE reform cannot be secured by policy instruction alone.

4.6. Digital quality assurance and AI-era evidence

Chinese universities are increasingly building digital platforms for teaching evaluation, learning analytics, graduate tracking and quality assurance. These systems can help identify weak courses, monitor feedback, compare cohorts and support programme review. Zhang et al. (2022) argue that big data has become an important but challenging element of quality assurance in Chinese higher education. The central issue is not data availability, but whether data are interpreted educationally.

Broader Chinese research on digital transformation cautions against treating data as automatically value-producing. Lin and Zhang (2025), for example, emphasise data standardisation, platform-based collaboration and public-goods orientation in data-element governance. Translated into higher education quality assurance,

this implies that learning evidence requires shared standards, responsible platforms and institutional value beyond departmental reporting. Algorithmic management research makes a parallel point: data systems shape behaviour through trust, control and incentive mechanisms rather than merely recording work processes (Zhang & Li, 2025a). Zhang and Li (2025b) similarly argue that digital transformation strengthens organisational resilience only when technology, management and culture operate together. OBE dashboards will therefore improve curriculum quality only if they are embedded in professional review cultures.

Generative AI makes this issue more urgent. If students can produce polished texts, code, reports or reflections with AI assistance, conventional submissions cannot always be treated as direct evidence of learning. At the same time, AI can support feedback generation, curriculum diagnosis and assessment analytics when used transparently and with human oversight (Bearman et al., 2024; UNESCO, 2023; Weng et al., 2024). Algorithmic management research also warns that data-driven systems can raise concerns about surveillance, privacy and autonomy if human judgement is displaced (Zhang & Li, 2025a). For OBE, the implication is clear: AI-supported evidence must be governed as educational evidence, not as automated proof of learning.

5. International Comparisons

5.1. Accreditation-led OBE: ABET and the Washington Accord

ABET and the Washington Accord represent accreditation-led OBE. ABET's criteria require programmes to define student outcomes, assess and evaluate the extent to which those outcomes are attained, and use results for continuous improvement (ABET, 2025). The International Engineering Alliance (2021) provides graduate attributes and professional competencies that support international comparability in engineering education.

China has borrowed selectively from this model, especially in engineering. Yet direct imitation is neither possible nor desirable. ABET and the Washington Accord operate through professional communities, accrediting agencies and institutional autonomy in ways that differ from China's policy-steered governance. The transferable lesson is not the reproduction of forms, but the expectation that assessment evidence should lead to documented programme improvement.

5.2. Qualification-framework-led OBE: Europe, Australia and Malaysia

The European Higher Education Area, the Australian Qualifications Framework and the Malaysian Qualifications Framework represent qualification-framework-led approaches. The EHEA uses learning outcomes to support qualification comparability, student-centred learning, recognition and mobility (European Commission, 2015; European Commission/EACEA/Eurydice, 2024; ENQA et al., 2015). The Australian and Malaysian frameworks organise qualification levels through descriptors of knowledge, skills, application and outcome domains (Australian Qualifications Framework Council, 2013; Malaysian Qualifications Agency, 2024).

These frameworks are useful for China because they show how outcomes can structure qualifications across sectors, not only within accredited engineering programmes. They also show the importance of level descriptors and progression. However, qualification frameworks can become abstract if programme teams cannot translate descriptors into curriculum design and assessment evidence. China's challenge is therefore not only to define outcomes across levels, but also to protect the educational meaning of those outcomes in courses.

5.3. Quality-enhancement and student-centred models: EHEA and the UK Quality Code

The EHEA and the UK Quality Code also foreground student-centred learning and quality enhancement. The 2024 Bologna implementation report describes student-centred learning as a multidimensional theme linked with learning outcomes, flexible learning paths, student support and quality assurance (European Commission/EACEA/Eurydice, 2024). The UK Quality Code places emphasis on academic standards, reliable and inclusive assessment, feedback, student support, external reference points and academic integrity (QAA, 2024).

This quality-enhancement logic is particularly relevant to China. Chinese OBE reform has strong institutional mobilisation capacity, but student participation remains underdeveloped. Students are commonly asked to complete course evaluations, but less often invited to interpret standards, review assessment fairness or participate in programme improvement. International comparison therefore suggests that Chinese OBE needs a stronger student-facing culture of feedback literacy and evaluative judgement (Carless & Winstone, 2023; Tai et al., 2018).

5.4. China as policy-steered OBE

Across the international frameworks, three distinctions are visible. First, ABET and the Washington Accord represent professional accreditation-led OBE, whereas AQF and MQF represent qualification-framework-led OBE. Second, the EHEA and the UK Quality Code place stronger emphasis on student-centred learning, mobility, feedback and external reference points. Third, China's OBE reform is more directly linked to policy steering, institutional accountability and national quality-development agendas.

This comparison should not be interpreted as a hierarchy of maturity. ABET offers a strong model of professional accreditation, the EHEA and UK frameworks foreground student-centred enhancement, and AQF/MQF illustrate qualification architecture. China's model is distinctive because policy steering gives OBE strong diffusion capacity, but this same strength can produce compliance pressure. The comparative issue is not whether China should copy another model, but how it can convert policy mobilisation into educationally valid evidence and curriculum improvement.

Figure 3 maps these governance logics. Its axes distinguish external accountability and comparability from learning enhancement and student experience, and professional or sector standards from national and institutional policy steering.

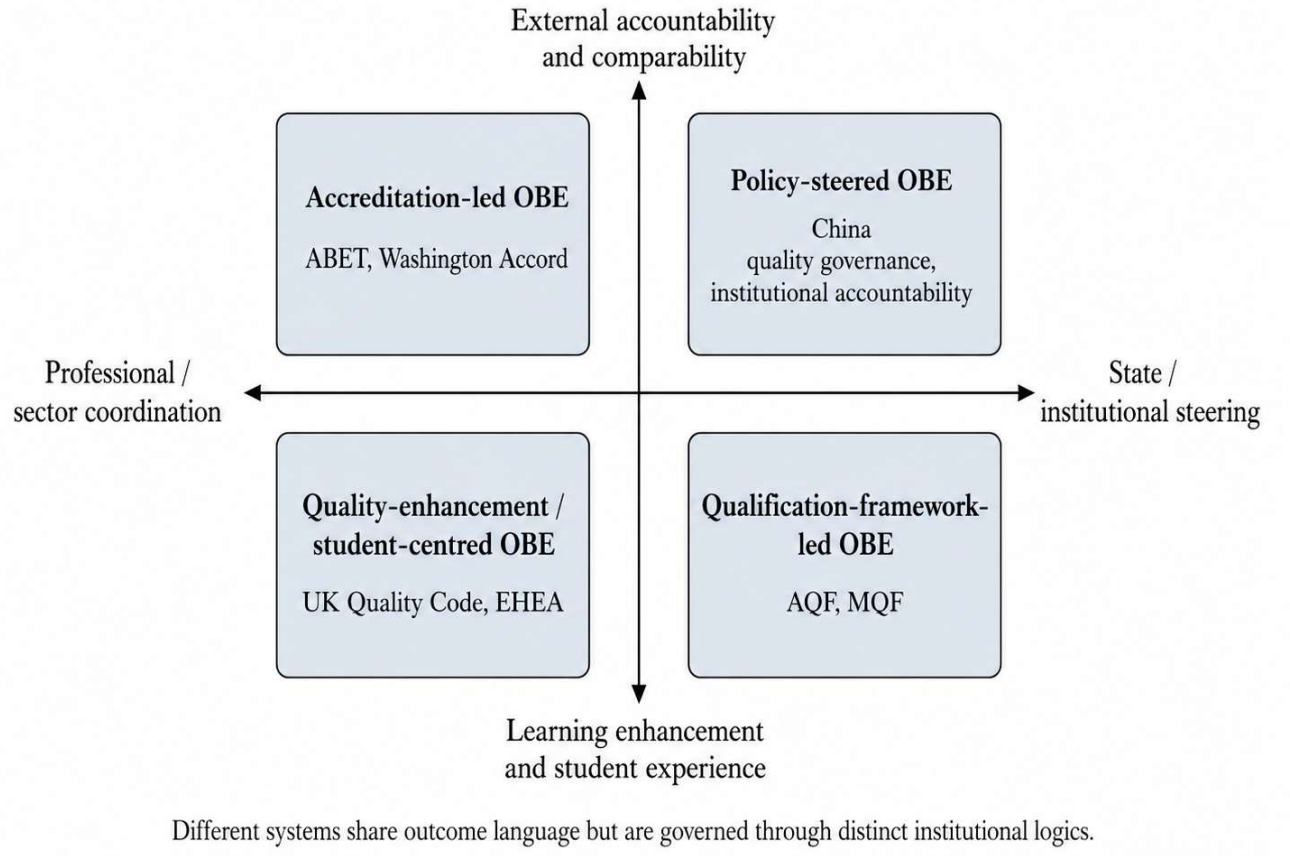

Figure 3. Comparative governance logics of OBE-related reform

Source: Authors' comparative synthesis based on ABET (2025), International Engineering Alliance (2021), European Commission/EACEA/Eurydice (2024), QAA (2024), Australian Qualifications Framework Council (2013), Malaysian Qualifications Agency (2024), State Council of the People's Republic of China (2025) and Liu et al. (2025).

Figure 3 should not be read as a ranking. It shows that OBE acquires different institutional meanings depending on the dominant governance logic. China's distinctive position is its combination of national policy steering, professional accreditation and institutional accountability. This combination explains both the speed of implementation and the risk that documentary alignment may outpace pedagogical change.

Table 4 extends the comparison by identifying the lesson each framework offers China and the caution attached to each lesson. The central point is that international comparison should support selective adaptation, not wholesale borrowing.

Table 4. International comparison of OBE-related higher education frameworks

Framework/system	Governance logic	Outcome language	Assessment/QA emphasis	Implication for China
ABET	Professional accreditation	Student outcomes and programme educational objectives	Documented assessment, evaluation and continuous improvement	Strengthen closed-loop improvement while avoiding paperwork accumulation
Washington Accord / IEA	International professional recognition	Graduate attributes and professional competencies	Substantial equivalence across accredited engineering programmes	Support comparability in engineering but avoid applying engineering templates to all disciplines
EHEA / Bologna Process	Regional comparability and mobility	Learning outcomes, ECTS, flexible pathways and student-centred learning	Internal and external QA linked with recognition and learning pathways	Use outcomes to support flexibility and student participation, not only compliance
UK Quality Code	Sector quality enhancement	Academic standards, learning outcomes, assessment and student support	Authentic, reliable and inclusive assessment; clear feedback and academic integrity	Improve assessment literacy, feedback use and GenAI governance
AQF and MQF	National qualifications architecture	Level descriptors, learning outcomes and qualification domains	Qualification comparability and accreditation expectations	Clarify progression across levels while keeping programme-level evidence meaningful
China	Policy-steered quality governance	Graduation requirements, curriculum maps, attainment evidence and continuous improvement	State strategy, professional accreditation, internal QA and digital platforms	Move from formal alignment to learning enhancement through valid evidence and curriculum intelligence

Note. Authors' analysis based on ABET (2025), International Engineering Alliance (2021), European Commission (2015), ENQA et al. (2015), European Commission/EACEA/Eurydice (2024), QAA (2024), Australian Qualifications Framework Council (2013), Malaysian Qualifications Agency (2024), Wu (2024) and Liu et al. (2025).

6. Discussion: Toward Next-Generation OBE in China

6.1. Reclaiming educational validity from compliance documentation

The central tension in Chinese OBE is not whether universities can produce formal alignment; many can. The more difficult question is whether alignment is educationally valid. This creates an implementation

paradox: the more successfully OBE becomes embedded in institutional quality systems, the more easily it can be reduced to forms, matrices and evidence templates unless validity and professional judgement are deliberately protected.

Reclaiming educational validity requires programme teams to examine student work rather than only attainment spreadsheets. Faculty should compare samples of assignments, laboratory reports, portfolios, practicum observations and capstone projects against rubrics. They should discuss whether the evidence demonstrates the intended outcome and whether curriculum design needs adjustment. Similar implementation difficulties have been identified in broader OBE research, where integration is constrained by assessment literacy, faculty workload, uneven stakeholder participation and the tendency to treat outcomes as compliance indicators (Mistamiruddin & Nasri, 2024).

6.2. Authentic assessment as the test of outcome attainment

Outcome attainment cannot be credibly demonstrated through final examinations alone, especially when outcomes include collaboration, communication, ethical reasoning, design judgement, research inquiry or professional practice. Authentic assessment is therefore the test of whether OBE has educational meaning. It asks students to perform, justify, create, interpret or intervene in ways that resemble the epistemic and professional practices of a discipline.

Generative AI strengthens this argument. If assessment is limited to decontextualised written submissions, evidence becomes vulnerable to outsourcing. If assessment includes process documentation, oral explanation, iterative feedback, practical demonstration and reflective judgement, AI becomes easier to govern and learning evidence becomes richer (Bearman et al., 2024; Weng et al., 2024). Chinese universities should therefore connect OBE reform with assessment redesign, not only attainment calculation.

6.3. Student agency and the limits of teacher-administered OBE

OBE is often described as student-centred, yet it is frequently implemented through teacher-administered procedures. Students are told the outcomes, assessed against them and asked to complete surveys, but they may not be helped to understand standards or use feedback. This weakens the link between outcome transparency and learning responsibility.

Student partnership does not mean lowering standards. It means making standards visible and usable. Students can participate in programme review, comment on workload and assessment fairness, maintain portfolios, engage in peer review and reflect on evidence of their own development. Zhang's (2026) study is relevant because it links sustainability-oriented teaching with motivation, programme relevance and learning commitment. OBE that ignores these motivational mechanisms may produce formal clarity without student ownership.

6.4. Disciplinary legitimacy beyond engineering templates

Engineering accreditation has given Chinese OBE a strong structure, but it has also shaped a dominant template. The danger is that other disciplines may adopt engineering-style matrices without considering their own forms of knowledge. A philosophy programme cannot assess judgement in the same way as a civil engineering programme. A visual arts programme cannot reduce authorship and aesthetic risk to generic behavioural indicators. A teacher education programme requires evidence of classroom reasoning, not only written knowledge.

Disciplinary legitimacy requires each programme to ask what counts as evidence in its field. This does not weaken OBE; it strengthens it. The principle of outcome orientation remains, but the form of evidence is discipline-specific. This approach also improves international comparability because it allows Chinese programmes to explain their standards in terms that are academically meaningful rather than bureaucratically uniform.

6.5. Curriculum intelligence and responsible digital evidence

The next phase of Chinese OBE should not be more documentation. It should be better curriculum intelligence. Curriculum intelligence refers to the responsible use of learning evidence, digital data and professional judgement to improve curriculum decisions. It is not the same as data accumulation. A

dashboard that is not connected to curriculum decisions is another report. A dataset that is not interpreted by teachers is not evidence of learning.

Responsible digital evidence has four conditions. First, data collection should be proportionate to educational purpose. Second, quantitative attainment should be triangulated with student work and qualitative judgement. Third, AI-assisted analysis should be transparent, auditable and limited by privacy safeguards. Fourth, digital evidence should lead to concrete decisions: assessment redesign, learning support, resource allocation or curriculum revision. These conditions align with recent work on digital transformation and organisational resilience, which emphasises the combined role of technology, management and culture rather than technology alone (Zhang & Li, 2025b).

Figure 4 integrates these arguments into a next-generation OBE architecture. The central concept is curriculum intelligence because the goal is not simply to document outcomes, but to build a system in which outcomes, evidence, judgement and learning enhancement reinforce one another.

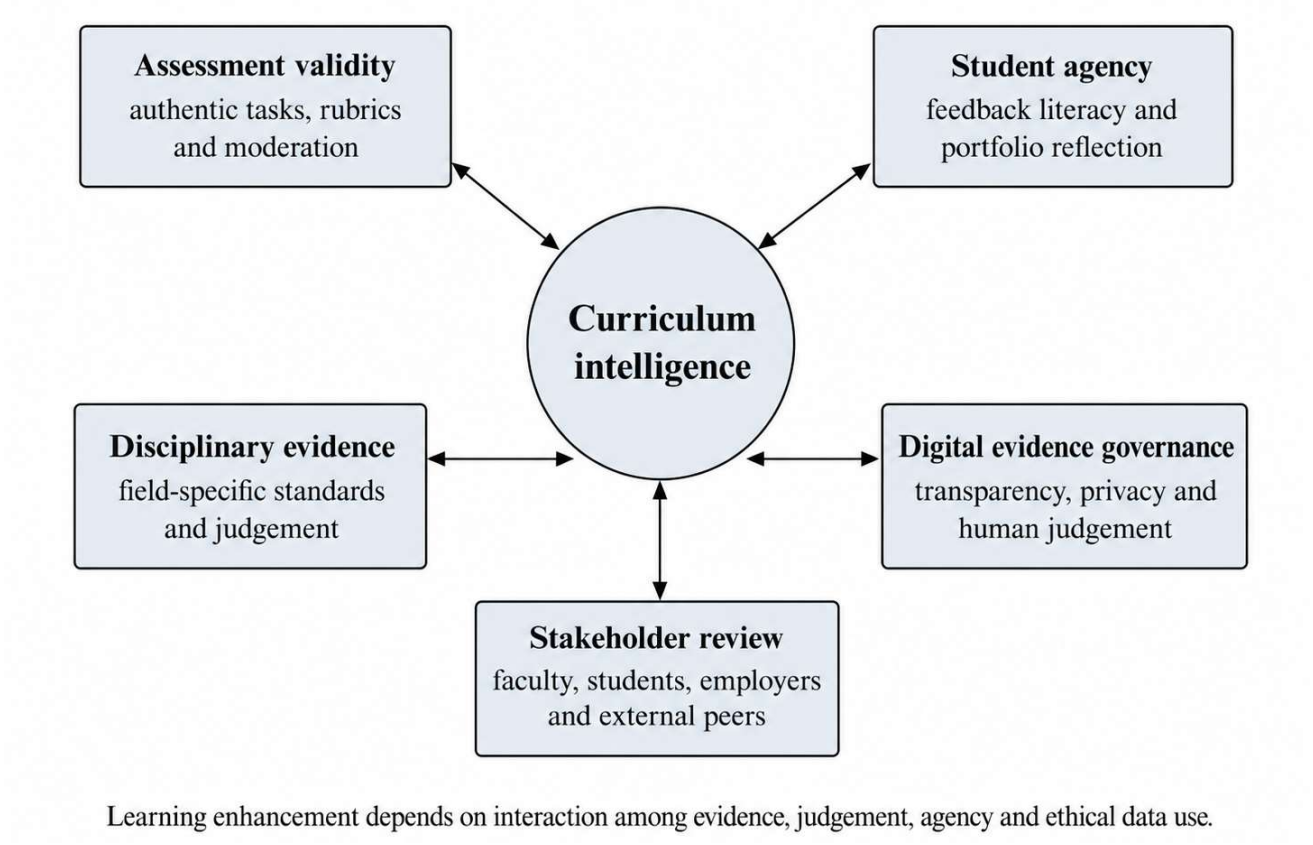

Figure 4. A next-generation OBE architecture for learning enhancement

Source: Authors' synthesis based on Bearman et al. (2024), Carless and Winstone (2023), Lin and Zhang (2025), QAA (2024), Tai et al. (2018), UNESCO (2023), Weng et al. (2024), Zhang et al. (2022), Zhang and Li (2025a, 2025b, 2025c) and Zhang (2026).

Figure 4 positions curriculum intelligence at the centre because next-generation OBE requires more than outcome mapping. It requires a system in which assessment validity, student agency, disciplinary evidence, digital ethics and stakeholder review interact. If one component is weak, the whole system tends to revert to compliance documentation.

Table 5 translates the discussion into a strategic agenda. It is framed around problems and improvement moves rather than generic recommendations, because the next stage of OBE reform depends on identifying where the implementation chain fails.

Table 5. Strategic agenda for next-generation OBE in Chinese higher education

Reform problem	Current symptom	Strategic response	Expected contribution
Compliance-oriented implementation	Reports, matrices and attainment sheets are complete but teaching practice changes slowly	Reduce low-value documentation and strengthen programme-level evidence discussion	Moves OBE from administrative fulfilment to learning enhancement
Weak assessment validity	Attainment scores are calculated but the evidence base is uneven	Use authentic tasks, rubric calibration, moderation and student-work review	Improves credibility of learning-outcome evidence
Limited student agency	Students provide survey data but rarely participate in standards and feedback processes	Develop feedback literacy, portfolio reflection and student participation in programme review	Connects outcome transparency with learner responsibility
Disciplinary template transfer	Non-engineering programmes adopt unsuitable matrices	Design discipline-sensitive outcome evidence and review criteria	Strengthens academic legitimacy beyond engineering
AI and datafication risks	Digital platforms generate data without sufficient interpretation or ethical safeguards	Govern AI use, triangulate data and link dashboards to curriculum decisions	Builds responsible curriculum intelligence
Weak international comparability outside accredited fields	Outcome language varies across disciplines and institutions	Use international frameworks as reference points while retaining Chinese policy and disciplinary context	Enhances global recognition without mechanical policy borrowing

Note. Authors' synthesis based on Almuhaideb and Saeed (2020), Sarkar and Kurup (2023), Mistamiruddin and Nasri (2024), QAA (2024), UNESCO (2023), Wu (2024), Mahrishi et al. (2025), Liu et al. (2025), Zhang (2026), Lin and Zhang (2025) and Zhang and Li (2025a, 2025b, 2025c).

7. Implications

7.1. Implications for policymakers

For policymakers, the main implication is that OBE should be governed as a quality-enhancement mechanism rather than as a reporting architecture. National and provincial agencies can support this shift by simplifying repetitive documentation, clarifying evidence standards and encouraging discipline-sensitive implementation. Policy should ask not only whether universities have outcomes and maps, but whether they can show credible student work and improvement decisions.

Policy can further encourage responsible data use. If learning analytics and AI-supported evaluation become part of quality assurance, national guidance should address data minimisation, transparency, privacy, academic integrity and the role of human judgement. Otherwise, digital OBE may become a new layer of surveillance rather than a mechanism of learning support.

7.2. Implications for university leaders and quality assurance professionals

University leaders should avoid locating OBE only in quality assurance offices. Quality assurance professionals are essential, but their role should be developmental rather than merely administrative. They can design templates, but they must also help programme teams interpret evidence, calibrate rubrics, organise student-work review and close improvement loops.

A useful institutional test is whether each annual OBE report can be linked to a specific curriculum decision made in the following cycle. If the answer is no, the quality system is collecting evidence without using it. Leaders should therefore align OBE with teaching development centres, digital learning teams, employer advisory boards and student support units. Curriculum improvement requires organisational coordination, not isolated report writing.

7.3. Implications for teachers

For teachers, OBE should not be experienced as external control over academic work. Properly used, it clarifies the relationship between course priorities, teaching methods, assessment tasks and feedback. Teachers can ask whether each major task produces evidence of a meaningful outcome and whether students understand the standard of performance expected.

This requires time and professional development. Teachers need support in rubric design, moderation, authentic assessment, feedback literacy and AI-aware assessment. Without such support, OBE will be experienced as paperwork. With support, it can become a shared language for improving curriculum coherence and student learning.

7.4. Implications for internationalisation

For internationalisation, Chinese universities should use OBE to strengthen comparability without erasing context. International frameworks can help programmes describe graduate attributes, qualification levels and assessment standards in globally legible terms. Yet Chinese universities should not treat international models as scripts. The aim should be substantial equivalence and credible evidence, not institutional mimicry.

This is especially important for non-engineering disciplines. International comparability should not mean engineering-style standardisation across the university. It should mean that each programme can explain its outcomes, evidence and standards in ways that are meaningful to its discipline and understandable to external reviewers.

8. Future Research Agenda

This article has proposed a conceptual and comparative framework. Future research should test, refine and challenge it through empirical studies. Table 6 sets out possible research directions and propositions. These propositions are not hypotheses tested in the present article. They are offered as an agenda for moving OBE research in China from policy description toward empirical explanation.

Table 6. Future empirical research agenda and testable propositions

Research direction	Illustrative proposition	Possible design	Expected contribution
Institutional variation	OBE effectiveness depends more on assessment validity and review quality than on the completeness of curriculum mapping	Comparative case studies across institutional types	Explains why formal implementation produces different outcomes
Student agency	Outcome transparency improves perceived learning relevance only when students develop feedback literacy and evaluative judgement	Student surveys, portfolios and focus groups	Links OBE to learner responsibility and motivation
Assessment validity	Authentic tasks provide stronger evidence of graduate capability than score-based attainment alone	Rubric validation, moderation studies and analysis of student work	Improves the credibility of outcome evidence
Disciplinary translation	OBE implementation is more sustainable when evidence forms reflect disciplinary epistemology	Cross-disciplinary programme comparison	Extends OBE beyond engineering without template transfer
Digital curriculum intelligence	Digital quality systems improve OBE only when dashboards are tied to teacher-led interpretation and curriculum decisions	Mixed-method studies of learning analytics and quality review	Clarifies the educational value and ethical limits of AI-supported QA

Note. Authors' synthesis.

9. Conclusion

OBE has become a significant reform mechanism in Chinese higher education, but its meaning depends on how it is translated into institutional practice. In China, OBE has developed through a distinctive combination of national strategy, professional accreditation, programme approval, internal quality assurance

and digital governance. This has enabled rapid diffusion, especially in engineering and applied disciplines. Yet the next stage of reform requires deeper attention to evidence validity, student agency, disciplinary legitimacy and responsible digital evidence.

International comparison shows that China can learn from ABET's continuous-improvement logic, the Washington Accord's graduate attributes, the EHEA's emphasis on student-centred learning and flexible pathways, the UK Quality Code's attention to authentic assessment and student support, and the qualification architectures of Australia and Malaysia. These models should not be copied mechanically. China's contribution to global OBE debate lies in showing both the power and the risk of policy-steered reform at scale.

The future of OBE in Chinese higher education should not be more paperwork. It should be a stronger relationship between outcomes and learning. That relationship will be credible only when evidence is valid, students understand standards, teachers can exercise professional judgement and universities use quality assurance to make curriculum decisions. China's experience shows that the future of OBE does not lie in multiplying templates; it lies in whether large higher education systems can build credible relationships among outcomes, evidence, judgement and student learning.

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