

Student Perceptions of Outcome-Based Education in Chinese Higher Education: Evidence from a Mixed-Methods Study

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Abstract

In recent years, higher education systems worldwide have faced increasing pressure to demonstrate the effectiveness of teaching and learning in producing employable, adaptable, and lifelong learners. Within this context, Outcome-Based Education (OBE) has been widely promoted as a means of aligning curriculum design, teaching, and assessment with clearly defined learning outcomes. However, the rapid policy-driven adoption of OBE has raised concerns that formal outcome frameworks do not necessarily translate into meaningful improvements in students' learning experiences, particularly when implementation emphasizes compliance rather than pedagogical transformation. This highlights the need to examine not only whether OBE is implemented, but whether it is perceived by students as useful and effective. This study examines the implementation of OBE in Chinese higher education from the student perspective, addressing a gap in the literature that has largely emphasized institutional and policy dimensions. Using a mixed-methods sequential explanatory design, quantitative data were collected from 525 undergraduates across diverse disciplines, complemented by qualitative interviews with 12 participants. Descriptive and inferential analyses were employed alongside thematic analysis to explore perceptions, learning outcomes, and implementation challenges. The findings indicate that students generally perceive OBE positively, particularly in terms of constructive alignment between learning outcomes, teaching activities, and assessment practices. Exposure to project-based learning, flipped classrooms, and digital learning platforms was associated with higher engagement, teamwork, and self-directed learning, whereas the development of critical thinking was perceived as less consistently emphasized. At the same time, lecture-dominated pedagogy, limited personalized support, and rigid curricula were identified as key barriers to effective OBE implementation. By foregrounding students' lived experiences, this study provides empirical evidence on both the potential and the constraints of OBE in the Chinese context, offering practical implications for enhancing teaching practices, curricular flexibility, and outcome-oriented higher education reform.

Keywords: Outcome-Based Education (OBE), Higher Education Reform, Student Perceptions, Mixed-Methods Study, Learning Outcomes, China

Introduction

Outcome-Based Education (OBE) has emerged over the past three decades as a transformative paradigm in global higher education reform. Originally advanced by Spady (1994), OBE emphasizes that all elements of the educational process—curriculum design, instructional strategies, and assessment practices—should be systematically aligned with clearly articulated learning outcomes. This outcome-oriented approach stands in contrast to traditional teacher-centered models, which prioritize content delivery and examination results. Instead, OBE requires institutions to ensure that every aspect of teaching and learning directly contributes to the achievement of competencies that students are expected to demonstrate upon graduation. Biggs and Tang's (2011) model of constructive alignment further elaborates this principle, highlighting that learning outcomes, teaching activities, and assessments must be coherently integrated in order to optimize student learning.

Globally, OBE has been widely adopted in accreditation frameworks and quality assurance systems. In the United States and Australia, OBE principles underpin professional accreditation processes that evaluate educational programs based on graduate competencies and employability (Lo & Choi, 2021). In Asia, countries such as Malaysia, the Philippines, and India have embedded OBE into national policies to enhance graduate readiness for the labor market (Rahman, Singh, & Pandian, 2020). These reforms demonstrate OBE's global relevance as both a pedagogical and policy framework aimed at aligning higher education outcomes with economic and social needs. At the same time, international studies report persistent challenges, including resistance from faculty accustomed to traditional teaching, lack of training in outcome-based assessment, and difficulties in integrating innovative teaching practices (Ajjawi et al., 2020).

China has actively embraced OBE as part of its higher education modernization agenda, particularly under the "Double First-Class" initiative that seeks to strengthen the global competitiveness of Chinese universities. Policy directives issued by the Ministry of Education emphasize the shift from knowledge-based instruction toward competency-oriented curricula that cultivate innovation, problem-solving, and lifelong learning skills (Ministry of Education of China, 2019). These reforms are closely tied to China's ambitions of producing graduates who can thrive in a knowledge-driven economy and compete on the international stage. Yet despite strong policy endorsement, empirical research shows that OBE implementation in Chinese universities remains uneven. Studies highlight the continued dominance of lecture-based pedagogy, rigid curricula, and insufficient digital infrastructure as barriers to reform (Huang, Zhang, & Liu, 2020; Wang, & Zhu, 2022).

Existing literature on OBE in China has provided valuable insights into institutional policy frameworks, curriculum design, and faculty readiness. However, three major gaps remain. First, much of the scholarship has been top-down, focusing on institutional compliance and policy implementation, while giving limited attention to the student perspective. Understanding students' experiences is critical, since they are the primary beneficiaries of educational reform and the ultimate evaluators of whether learning outcomes are achieved. Second, prior studies in China have relied predominantly on quantitative surveys, which, while effective for identifying general trends, may not capture the depth and complexity of students' lived experiences in OBE classrooms. Third, there has been insufficient examination of how innovative teaching methods and digital technologies—such as project-based

learning, flipped classrooms, and AI-supported platforms—shape OBE implementation in the Chinese context. International evidence suggests that such innovations significantly enhance student engagement and learning (Freeman et al., 2014; Tang & Chaw, 2021), yet empirical data from China remain limited.

This study seeks to address these gaps by adopting a mixed-methods approach to examine students' perceptions of OBE in Chinese higher education. Specifically, it investigates four key dimensions: (1) students' perceptions of OBE implementation in their courses, (2) the challenges they encounter, (3) their exposure to innovative teaching and digital technologies, and (4) the learning outcomes and satisfaction they associate with OBE. The combination of survey and interview data enables both breadth and depth: quantitative data capture patterns across a large student sample, while qualitative data provide nuanced insights into the experiences behind the numbers.

The significance of this research is threefold. Theoretically, it contributes to OBE scholarship by refining constructive alignment to emphasize two critical mediating factors: clarity of outcomes and quality of feedback. It also situates OBE within the Chinese educational context, underscoring the need for cultural adaptation of global models. Practically, the study provides evidence-based recommendations for faculty and universities, including the importance of professional development, curricular flexibility, and the integration of digital platforms. At the policy level, the findings inform ongoing higher education reforms by identifying both progress and constraints in advancing student-centered learning.

Accordingly, this study is guided by the following research questions:

- i. How do students perceive the implementation of OBE in their university courses?
- ii. What challenges are encountered in implementing OBE?
- iii. How do innovative teaching methods and digital technologies influence students' experiences of OBE?
- iv. What learning outcomes and levels of satisfaction do students associate with OBE?

By centering student voices, this study aims to provide a comprehensive understanding of OBE implementation in Chinese higher education. It contributes to bridging the gap between policy rhetoric and classroom reality, offering both theoretical insights and practical strategies for advancing sustainable higher education reform in China.

Literature Review

Theoretical Foundations of Outcome-Based Education

Outcome-Based Education (OBE) is an educational philosophy that organizes teaching, learning, and assessment around clearly articulated outcomes that students are expected to achieve (Spady, 1994). Unlike traditional models that emphasize content coverage and teacher-centered instruction, OBE places student achievement at the core of the curriculum. Spady argued that clarity of outcomes and alignment of educational practices are essential for ensuring that learners develop the competencies necessary to succeed in academic and professional contexts.

Biggs and Tang's (2011) model of constructive alignment has become one of the most influential frameworks for operationalizing OBE in higher education. According to this model,

learning outcomes, teaching activities, and assessment tasks must be coherently aligned so that students are consistently guided toward achieving the intended competencies. Constructive alignment also emphasizes transparency: students should be able to clearly identify what they are expected to learn, how they will learn it, and how their performance will be assessed.

Complementary theories such as Bloom's Taxonomy (Bloom, 1956) and its later revision by Anderson and Krathwohl (2001) provide a hierarchical structure for categorizing learning objectives, ranging from lower-order skills such as remembering and understanding to higher-order skills such as analyzing, evaluating, and creating. These frameworks help educators design measurable outcomes and ensure that students develop cognitive skills beyond rote memorization. Together, these theoretical foundations have shaped the global diffusion of OBE and continue to guide both curriculum reform and empirical research.

Global Implementation of OBE

The global spread of OBE has been driven by multiple factors, including accreditation requirements, the demand for employability, and the need to internationalize higher education. In the United States and Australia, OBE principles are embedded in accreditation systems, where program evaluation is increasingly based on graduate outcomes rather than input measures (Lo & Choi, 2021). Similarly, in Europe, the Bologna Process has emphasized learning outcomes as a cornerstone of the European Qualifications Framework (European Commission, 2008).

In Asia, several countries have made OBE a cornerstone of national higher education reform. Malaysia, for example, has mandated OBE across universities through its accreditation framework, linking program outcomes to employability skills (Rahman, Singh, & Pandian, 2020). The Philippines has integrated OBE into curriculum design to enhance global competitiveness, while India has adopted OBE as part of engineering accreditation through the Washington Accord (Tang & Chaw, 2021). These initiatives illustrate the centrality of OBE to the global agenda of aligning education with labor market demands.

Despite its wide adoption, OBE has faced persistent challenges. Ajjawi et al. (2020) note that while constructive alignment is conceptually appealing, its practical implementation often encounters resistance from faculty accustomed to traditional methods. Faculty may lack training in outcome-based assessment, and institutions may not provide sufficient support for innovation. Moreover, OBE requires cultural and structural changes that go beyond curriculum redesign, including shifts in pedagogy, institutional culture, and assessment practices. International evidence suggests that the success of OBE depends not only on formal policies but also on sustained investment in faculty development and organizational change.

OBE in Chinese Higher Education

China's adoption of OBE is closely tied to its national agenda for higher education modernization and international competitiveness. The "Double First-Class" initiative launched by the Ministry of Education emphasizes the cultivation of innovation, problem-solving, and lifelong learning skills (Ministry of Education of China, 2019). These priorities align closely with OBE principles, making OBE an attractive framework for reform.

Empirical research, however, reveals significant implementation gaps. Huang, Zhang, and Liu (2020) report that despite institutional mandates, lecture-based pedagogy continues to dominate Chinese classrooms, limiting opportunities for student-centered learning. Similarly, Wang, Y., & Zhu, J. (2022) found that faculty often lacked the training and resources necessary to implement OBE principles effectively. Wu (2021) observed that both students and faculty acknowledged the potential of OBE but expressed skepticism about its practical impact, given the inconsistent application across different courses.

Other studies point to structural and cultural barriers. Rigid curricula restrict opportunities for project-based or interdisciplinary learning (Wang & Zhu, 2022), while limited institutional autonomy constrains flexibility in curriculum reform. The exam-oriented tradition in Chinese education also presents challenges: while OBE emphasizes critical thinking and problem-solving, classroom practices often remain focused on knowledge transmission and high-stakes assessment (Zhao, 2019). These tensions highlight the difficulty of transplanting global OBE models into a context where traditional teaching and assessment practices are deeply entrenched.

Innovative Pedagogies and Digital Technologies in OBE

A growing body of research highlights the potential of innovative teaching methods and digital technologies to advance OBE principles. Active learning approaches such as project-based learning (PBL), flipped classrooms, and collaborative group work are closely aligned with OBE's emphasis on student engagement and competency development. Freeman et al. (2014) demonstrated that active learning significantly improves student performance in science, technology, engineering, and mathematics (STEM) disciplines. Tang and Chaw (2021) similarly found that blended learning approaches enhance student engagement and self-directed learning in Asian higher education.

Digital technologies further extend the possibilities of OBE implementation. Learning management systems (LMS), MOOCs, and AI-assisted platforms can provide timely feedback, enable personalized learning, and facilitate large-scale tracking of outcomes (Mishra, Gupta, & Shree, 2020). During the COVID-19 pandemic, Chinese universities rapidly adopted online platforms, demonstrating both the opportunities and limitations of digital OBE (Huang et al., 2020; Tlili et al., 2021). While digital tools supported continuity in learning, uneven access to technology and faculty readiness created disparities in implementation (Lo & Choi, 2021).

Despite these advances, adoption of innovative pedagogies and technologies in China remains inconsistent. Some instructors embrace project-based learning and digital platforms, while others continue to rely heavily on traditional lectures (Wu, 2021). This unevenness underscores the importance of institutional support, faculty training, and cultural adaptation for the successful integration of innovation into OBE practices.

Gaps in the Literature

Although the global and Chinese literature on OBE has expanded significantly, several gaps remain that justify this study. First, research in China has largely focused on institutional and policy-level perspectives, with relatively limited attention to student perceptions. Understanding how students experience OBE in practice is essential for assessing whether reforms achieve their intended goals. Second, the predominance of quantitative surveys in

prior studies limits the ability to capture the complexity of student experiences. Mixed-methods designs that combine breadth with depth are needed to provide a more comprehensive understanding. Third, the role of innovative pedagogies and digital technologies in shaping OBE implementation in China has not been systematically examined, despite international evidence of their positive impact.

Addressing these gaps, the present study investigates OBE implementation from the student perspective, using a mixed-methods approach that integrates survey and interview data. By examining perceptions, challenges, exposure to innovation, and learning outcomes, the study contributes to both the theoretical refinement of OBE and the practical advancement of student-centered education in China.

Methodology

Research Design

This study adopted a mixed-methods sequential explanatory design (Creswell & Plano Clark, 2018), which integrates quantitative and qualitative data to provide a comprehensive understanding of Outcome-Based Education (OBE) implementation in Chinese higher education. The design was selected for three reasons. First, it allows for the identification of generalizable patterns in student perceptions through large-scale survey data. Second, it provides depth and nuance by capturing lived experiences through qualitative interviews. Third, triangulation enhances the validity and robustness of the findings by corroborating evidence across methods.

The research was conducted in two phases. In the quantitative phase, a survey was distributed to undergraduate students from different disciplines and academic years to measure their perceptions of OBE, the challenges they face, their exposure to innovative pedagogies and digital platforms, and their perceived learning outcomes. In the qualitative phase, follow-up semi-structured interviews were conducted with a subset of students to contextualize and deepen the interpretation of the survey results. The integration of both strands was guided by the principle of complementarity, with quantitative results providing breadth and qualitative data offering depth.

Quantitative Phase

Participants

The survey was administered to undergraduate students enrolled in Chinese universities, representing a range of disciplines including Arts and Design, Engineering, and Business. A total of 525 valid responses were collected, providing a robust dataset for analysis. Participants were drawn from multiple academic years to ensure diversity in experiences and perspectives. The sample comprised ~61% female and ~39% male students, spanning Years 1–4, with the largest groups in Years 3–4, and the sample covered both lower- and upper-year students to capture longitudinal exposure to OBE-related practices. In total, [Q] questionnaires were distributed and [R] were returned; after screening, 525 valid responses remained (effective response rate = $[R/Q \times 100\%]$). Recruitment used course announcements and university mailing lists across [N] universities/departments in regions. Participants were presented with an information sheet outlining the study purpose, procedures, potential risks/benefits, voluntary nature of participation, and data protection. Proceeding to the questionnaire indicated consent.

Instrument

The survey instrument was developed based on established OBE literature (Biggs & Tang, 2011; Huang, Zhang, & Liu, 2020) and adapted to the Chinese higher education context. It consisted of four sections:

- i. **Perceptions of OBE Implementation:** Items focused on clarity of learning outcomes, alignment of teaching and assessment, and the usefulness of feedback.
- ii. **Challenges in Implementation:** Items measured barriers such as lecture-dominated pedagogy, lack of personalized support, and rigidity in curricula.
- iii. **Exposure to Innovative Pedagogies and Technologies:** Items captured students' experiences with project-based learning, flipped classrooms, collaborative activities, and digital platforms.
- iv. **Learning Outcomes and Satisfaction:** Items measured perceived gains in self-directed learning, teamwork, critical thinking, employability, and overall satisfaction.

Each item was rated on a **five-point Likert scale** (1 = strongly disagree, 5 = strongly agree). The questionnaire was administered online through Wenjuanxing, a widely used Chinese survey platform. Prior to distribution, the instrument was pilot-tested with 30 students to ensure clarity and reliability. Minor revisions were made to wording to improve comprehensibility.

Data Analysis

Quantitative data were analyzed using **SPSS 26.0**. Descriptive statistics (means, standard deviations, and frequencies) were used to summarize overall trends. Inferential statistics included **independent-samples t-tests** and **one-way ANOVA** to examine differences across demographic variables such as gender, discipline, and year of study. Reliability was assessed for each dimension; Cronbach's alpha values and measurement diagnostics will be reported in Table 1 once computed from the item-level dataset.

Qualitative Phase

Participants

For the qualitative phase, **12 students** were recruited from among the survey respondents who volunteered to participate in follow-up interviews. Purposive sampling was employed to ensure diversity in terms of gender, discipline, and academic year. This strategy allowed for capturing varied perspectives while maintaining feasibility in terms of time and resources.

Interview Protocol

Semi-structured interviews were conducted using an interview guide organized around the four dimensions of the study. The guide ensured consistency across interviews while allowing flexibility to probe emergent themes. Sample questions included:

- i. How do you understand OBE in your courses?
- ii. What challenges have you encountered in OBE-based learning?
- iii. Have you experienced flipped classrooms, project-based learning, or digital platforms in your courses?
- iv. How has OBE influenced your skills, employability, and satisfaction with learning?

Interviews lasted approximately **30–45 minutes** and were conducted either face-to-face or online (via Zoom/Teams), depending on participant availability. All interviews were conducted in Mandarin, audio-recorded with consent, and transcribed verbatim.

Data Analysis

Qualitative data were analyzed using **thematic analysis** following Braun and Clarke's (2006) six-step process: (1) familiarization with data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. Coding was inductive, allowing themes to emerge from the data, but guided by the conceptual framework of the study. NVivo software was used to manage and organize the transcripts, facilitating systematic coding and retrieval. To enhance reliability, two researchers independently coded a subset of transcripts and compared results, resolving discrepancies through discussion.

Ethical Considerations

According to Universiti Kebangsaan Malaysia (UKM) research ethics policy, fully anonymised, minimal-risk surveys with adult participants may be exempted from full review. This study was determined exempt by the UKM Research Ethics Committee (Exemption **No. [XXXX]**, dated [DD MM YYYY]). All participants read an online information sheet and provided informed consent before starting the questionnaire. Participation was voluntary and anonymous; no personally identifiable information was collected. Interviewees were assigned pseudonyms (e.g., S1–S12), and data were stored on password-protected devices with access restricted to the research team.

Integration of Quantitative and Qualitative Data

The integration of findings occurred at two stages. First, survey results informed the development of the interview guide, ensuring that qualitative data could contextualize and explain quantitative trends. Second, during interpretation, findings were compared and contrasted across methods to identify convergences, divergences, and complementarities. For example, quantitative evidence that critical thinking development was positive but not consistently emphasized was elaborated by interview accounts of classroom practices that emphasized application over critique. This process strengthened the validity of the conclusions by demonstrating consistency across data sources while highlighting areas of complexity that would have been overlooked by a single-method design.

Results

This section presents findings from both the quantitative survey (n = 525) and the qualitative interviews (n = 12). The results are organized around the four dimensions of the study: (1) student perceptions of OBE implementation, (2) challenges encountered in practice, (3) exposure to innovative pedagogies and digital technologies, and (4) perceived learning outcomes and satisfaction. Quantitative results provide an overview of trends across the student sample, while qualitative insights contextualize and enrich these patterns by illustrating lived experiences.

Perceptions of OBE Implementation

Table 1

Perceptions of OBE Implementation

Dimension	Mean (M)	Standard Deviation (SD)	Positive Feedback (%)	Key Insight
Clarity of Learning Outcomes	3.87	0.74	65.5%	Most students can identify intended learning outcomes, though some find them abstract.
Alignment with Teaching and Assessment	3.95	0.71	73.3%	Positive alignment between teaching and assessment, though not always fully integrated.
Feedback from Assessments	4.03	0.86	74.9%	Feedback is helpful in improving student learning, though some students desire more personalized feedback.
Instructor Emphasis on Outcomes	3.98	0.82	71.8%	Instructors emphasize learning outcomes, but this could be more explicitly communicated.

Quantitative Results

Quantitative results indicated that students generally hold positive perceptions of OBE implementation. On a five-point Likert scale, the mean score for clarity of learning outcomes was **3.87 (SD = 0.74)**, suggesting that most students are able to identify intended outcomes in their courses. Similarly, the mean score for alignment of teaching and assessment with outcomes was **3.95 (SD = 0.71)**, reflecting student recognition of constructive alignment in practice. However, the dimension of usefulness of feedback received a lower mean of **3.41 (SD = 0.86)**, highlighting a gap in formative assessment practices.

Qualitative interviews provided supporting evidence. Several students reported that they were increasingly aware of course outcomes, but these were not always articulated in a student-friendly way. As one participant (S3) remarked:

“Sometimes the outcomes are listed in the syllabus, but they feel abstract. I don’t always know how they connect to what I actually learn in class.”

This suggests that while outcomes are formally present, communication and integration into the learning process remain inconsistent.

Qualitative Results

The qualitative data collected through semi-structured interviews generally supported the survey findings. Students reported a mixed experience with Outcome-Based Education (OBE), particularly with regard to the clarity of learning outcomes and the alignment between teaching and assessment. One student (S1) remarked:

“The learning outcomes are often mentioned in the syllabus, but they feel abstract and not always easy to connect with daily lessons.”

However, feedback on the clarity of learning outcomes was predominantly positive. Many students indicated that they appreciated the direct connection between the learning outcomes and assessments, although they also highlighted areas where outcomes could be more explicitly communicated. One student (S2) noted:

“I appreciate when my assignments are clearly linked to the course outcomes; it helps me understand what I’m working towards.”

Despite the general positive sentiment towards OBE, several challenges emerged from the interviews. Students expressed frustration with the ongoing dominance of lecture-based teaching. This was echoed by a number of participants who stated that despite the push for more student-centered learning, traditional lecture methods remained the dominant mode of instruction. One student (S5) explained:

“I like the idea of OBE, but many courses still feel like traditional lectures. There is not enough room for us to explore ideas or work independently.”

Additionally, a number of students reported a lack of personalized support, especially when dealing with difficulties in learning. One student (S3) shared:

“I know what I need to improve on from the feedback, but I don’t always know how to get there without additional guidance.”

Regarding innovative teaching methods, students expressed positive views on the use of project-based learning (PBL), flipped classrooms, and digital platforms. As one participant (S4) mentioned:

“Project-based learning and flipped classrooms help me engage more with the material. It feels more like real-world learning rather than just memorizing facts.”

However, there were concerns about the inconsistent application of these methods. While some students reported frequent exposure to innovative teaching practices, others felt that these were not widely used across all their courses. One student (S6) commented:

“Some teachers are great at using flipped classrooms and technology, but it really depends on the teacher. Some of my other classes are still just lectures.”

In summary, the qualitative results complement the survey findings by revealing both strengths and areas for improvement in OBE implementation. Students recognize the value of clear learning outcomes, innovative teaching, and constructive feedback but also highlight persistent challenges, such as the dominance of lecture-based instruction and insufficient personalized support.

Challenges in OBE Implementation

Table 2

Challenges in OBE Implementation

Challenge	Mean (M)	Standard Deviation (SD)	Percentage of Students Reporting Challenge (%)	Key Insight
Lecture-Dominated Instruction	3.72	0.86	61.7%	Traditional lecture-based teaching remains dominant, limiting student engagement.
Lack of Personalized Support	3.48	0.78	49.0%	Many students feel they lack personalized feedback and guidance in their learning.
Rigid Curriculum	3.32	0.81	43.0%	The curriculum is perceived as inflexible, which hinders adaptability and student-centered learning.
Inadequate Digital Tools	3.40	0.76	45.5%	Limited use of digital platforms and tools in some courses. Students desire more tech-driven support.

The implementation of Outcome-Based Education (OBE) faced several challenges, as revealed by both the survey data and qualitative interviews. The quantitative results indicated that students perceive **lecture-based teaching** as the most prominent barrier to the effective implementation of OBE, with a mean score of **M = 3.72 (SD = 0.86)**, and **61.7%** of students reporting that their courses are still predominantly lecture-based.

Qualitative interviews further emphasized this challenge. Many students expressed frustration with the continuing dominance of traditional teaching methods in their courses. One student (S7) mentioned:

“I know OBE is meant to be student-centered, but most of the time, the class is just lectures. I don’t feel that I get to explore things on my own or in groups.”

Additionally, the lack of **personalized support** for students in navigating their learning journey was identified as another significant challenge. While OBE aims to foster individual responsibility and self-directed learning, students reported that they often struggled to receive personalized feedback and guidance. As one student (S8) shared:

"I get general feedback on my assignments, but I don't always know what exactly I need to improve. More personalized feedback would be really helpful."

A third challenge identified was the **rigidity of the curriculum**. Many students felt that the curriculum was too structured and left little room for flexibility, particularly in adapting to their individual learning needs. One participant (S9) commented: *"The curriculum feels like it's set in stone. There's little room for us to bring in our own ideas or adapt the learning to our own pace."*

Finally, students also reported issues with the **lack of adequate learning platforms and tools**. Despite the emphasis on integrating technology into OBE, many students felt that the digital resources provided were not always sufficient to support their learning. One student (S10) stated:

"I wish we had more digital tools or platforms to help us learn. Some courses use online resources, but others don't, and it makes the experience uneven."

These challenges, although varying in severity, reflect the need for further development in implementing OBE across courses. The findings suggest that while OBE has the potential to enhance student learning outcomes, the transition from traditional teaching to student-centered, flexible learning environments faces several obstacles that need to be addressed.

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Exposure to Innovative Pedagogies and Digital Technologies

The survey results indicated relatively high levels of exposure to innovative teaching methods. Over **70%** of respondents reported experiencing **project-based learning (PBL)** and **group discussions**, and **65%** reported exposure to **flipped classrooms**. The mean score for this dimension was **M = 3.89 (SD = 0.72)**, indicating generally positive engagement with these teaching methods.

Additionally, **digital technologies** played a significant role in students' learning experiences. Approximately **68%** of students reported using **online learning platforms** (e.g., **MOOCs, LMS**), and **45%** had experienced **AI-assisted assessment**. These practices were associated with increased engagement and a better understanding of course material.

Qualitative interviews reinforced the survey results, with several students expressing appreciation for the opportunities provided by innovative teaching methods. One student (S2) highlighted the value of digital platforms:

“Online platforms allow me to review lectures at my own pace, which makes it easier to follow the learning outcomes.”

Another student (S4) shared:

“I’ve experienced project-based learning and flipped classrooms in several courses, and I think these methods help me engage more with the content and work better with my peers.”

However, while many students reported positive experiences with these innovative methods, there were concerns about the inconsistency in their application across different courses. As

one participant (S5) noted:

“Some teachers use flipped classrooms and apps, which I find really effective. Others still rely on traditional lectures, which makes the learning experience feel uneven.”

Another student (S7) explained:

“The use of technology in teaching is helpful, but not all professors use it regularly. It would be great if this could be standardized across courses.”

These findings suggest that while there is considerable exposure to innovative pedagogies and digital tools, the implementation of these methods is not yet consistent across courses and instructors.

Learning Outcomes and Satisfaction

The survey results revealed generally positive perceptions of learning outcomes and student satisfaction with OBE implementation. Students reported significant improvements in **teamwork skills** (M = 4.05, SD = 0.68) and **self-directed learning** (M = 3.91, SD = 0.73), both of which are key components of OBE. Additionally, **career readiness** was perceived to have improved (M = 3.88, SD = 0.75), with students feeling more prepared for the workforce as a result of their OBE learning experiences.

However, while most students recognized improvements in these areas, the **development of critical thinking skills** received a lower mean score of **3.47 (SD = 0.82)**, indicating that, despite the emphasis on higher-order skills in OBE, critical thinking remains an area where progress is perceived to be relatively weaker.

In qualitative interviews, students echoed the survey findings, noting significant gains in collaborative skills and independent learning. One student (S6) shared: *“Before, I relied on the teacher to tell me everything. Now, I feel more responsible for my own learning, especially through group projects.”*

Another participant (S7) explained:

“The OBE approach definitely made me more self-directed. I have learned how to manage my learning outside of class, and that feels empowering.”

While these positive developments were widely recognized, some students expressed concerns about the lack of emphasis on **critical thinking** in the OBE framework. One student (S8) remarked:

“We are told to apply our knowledge, but I don’t feel like I’m really encouraged to think critically or challenge ideas.”

Overall, students expressed **high satisfaction** with their OBE learning experience, with a mean score of **3.92 (SD = 0.70)**. This suggests that, although there are areas for improvement, OBE’s student-centered approach was largely well-received. However, the discrepancy between satisfaction and limited gains in critical thinking suggests that overall satisfaction does not necessarily equate to deep learning outcomes in all areas.

Summary of Results

Taken together, the quantitative and qualitative findings reveal a dual reality of OBE implementation in Chinese higher education. On the one hand, students recognize progress in the clarity of outcomes, constructive alignment, and exposure to innovative pedagogies and technologies. On the other hand, structural and cultural barriers particularly lecture dominated instruction, uneven feedback, rigid curricula, and underdeveloped critical thinking continue to constrain the transformative potential of OBE.

Discussion

The purpose of this study was to examine students’ perceptions of Outcome-Based Education (OBE) implementation in Chinese higher education, the challenges they encounter, their exposure to innovative pedagogies and digital technologies, and the learning outcomes and satisfaction associated with OBE. By employing a mixed-methods design that combined

survey data from 525 undergraduates with interviews of 12 participants, the study provides both breadth and depth in understanding how OBE is experienced from the student perspective. This section discusses the findings in relation to existing literature, elaborates on their theoretical significance, and outlines practical implications for faculty, institutions, and policymakers.

Perceptions of OBE Implementation

The results showed that students generally held positive perceptions of OBE implementation, particularly in terms of constructive alignment between learning outcomes, teaching, and assessment. This finding is consistent with Biggs and Tang's (2011) argument that alignment is the cornerstone of effective pedagogy. Similar evidence has been reported across Asian contexts, where students recognize improvements when assessments are explicitly tied to learning outcomes (Lo & Choi, 2021).

However, while students recognized constructive alignment, experiences of formative feedback were **uneven across courses** rather than uniformly weak; this aligns with interview accounts that emphasized variability by instructor, a result echoed by Ajjawi et al. (2020), who argued that constructive alignment must extend beyond structural design to include formative feedback as a mechanism for continuous improvement. Without timely and actionable feedback, students may struggle to monitor their own progress and adjust learning strategies effectively. This suggests that while Chinese universities have made progress in aligning outcomes and assessments, the feedback loop remains underdeveloped.

Challenges in OBE Implementation

The persistence of lecture-dominated pedagogy emerged as the most significant barrier, aligning with findings from Huang, Zhang, and Liu (2020) and Wang, Y., & Zhu, J. (2022), who documented that despite institutional rhetoric about student-centered learning, traditional instruction continues to prevail in Chinese universities. Interviews in this study reinforced the gap between policy discourse and classroom practice, with students describing OBE as "visible in documents but invisible in daily classes."

Another challenge identified was the lack of personalized support, consistent with Wu (2021), who observed that large class sizes and limited faculty resources restrict opportunities for mentoring and individualized guidance. The rigidity of curricula further compounded these issues, as students found limited space for exploration or interdisciplinary learning, reflecting structural constraints noted by Wang and Zhu (2022). Collectively, these challenges underscore that OBE implementation in China often remains superficial, constrained by institutional inertia and exam-oriented traditions.

Exposure to Innovative Pedagogies and Digital Technologies

A promising finding was that many students reported exposure to project-based learning, flipped classrooms, and digital platforms. These experiences were associated with enhanced engagement, problem-solving, and self-directed learning. This is consistent with international evidence that active learning significantly improves student outcomes in STEM and other disciplines (Freeman et al., 2014). Tang and Chaw (2021) also found that blended and flipped learning increased motivation and participation in Asian higher education.

At the same time, this study revealed that adoption of these methods remains uneven. Some instructors enthusiastically implement flipped classrooms and interactive technologies, while others continue to rely heavily on lecture slides. This variability mirrors findings by Mishra, Gupta, and Shree (2020), who noted disparities in faculty readiness to integrate digital tools during the COVID-19 pandemic. It also highlights the importance of institutional investment in faculty training and infrastructure to ensure consistent integration of innovation into OBE practice.

Learning Outcomes and Student Satisfaction

Students reported significant perceived gains in teamwork, self-directed learning, and employability, with gains in critical thinking perceived as positive but less consistently emphasized. This aligns with Zhao's (2019) observation that critical thinking remains underdeveloped in Chinese higher education, where exam-oriented traditions prioritize knowledge acquisition over inquiry and critique. The finding also resonates with Wu (2021), who reported skepticism among students about OBE's ability to foster higher-order skills.

The high levels of overall satisfaction observed in this study suggest that students value the shift toward more student-centered approaches, even if deep cognitive skills are not fully developed. This distinction between surface-level satisfaction and deeper learning outcomes is important for understanding the limitations of current OBE practices. While students may feel more engaged, engagement does not necessarily translate into advanced competencies unless curricula and pedagogy are explicitly designed to cultivate them.

Theoretical Contributions

This study makes three theoretical contributions to OBE scholarship:

- i. **Refining Constructive Alignment:** The findings confirm the relevance of constructive alignment but extend the model by highlighting the mediating roles of outcome clarity and feedback. Without clear communication of outcomes and consistent formative feedback, alignment risks becoming a purely structural exercise rather than a lived pedagogical reality.
- ii. **Contextual Adaptation of OBE:** The persistence of lecture-based pedagogy and underdeveloped critical thinking skills underscores the need for cultural adaptation when applying OBE in China. Spady's (1994) universalist model requires contextualization to fit exam-oriented traditions and hierarchical teacher–student relationships. This study thus contributes to a more nuanced, context-sensitive understanding of OBE.
- iii. **Integration of Innovation and Technology:** By documenting student experiences with flipped classrooms, project-based learning, and digital platforms, the study demonstrates the importance of integrating innovation and technology as structural components of OBE. This extends existing frameworks by explicitly linking pedagogical reform to technological infrastructure.

Practical Implications

The results of this study yield actionable insights for stakeholders at different levels.

- i. **For Faculty:** Professional development programs are needed to help instructors move beyond lecture-based approaches and incorporate active learning strategies. Training should emphasize not only course design but also feedback practices, ensuring that

- students receive meaningful guidance throughout the learning process.
- ii. **For Universities:** Institutions should invest in digital infrastructure, such as learning management systems and AI-supported platforms, to support interactive and personalized learning. Curricular flexibility should also be enhanced, allowing space for project-based and interdisciplinary work that aligns with OBE principles.
 - iii. **For Policymakers:** Policies should incentivize faculty innovation by linking promotion and evaluation criteria to teaching effectiveness and student outcomes, rather than solely research output. Stronger university–industry partnerships are also essential to align outcomes with employability, ensuring that OBE addresses both academic and labor market needs.

Limitations

While the mixed-methods design provides both breadth and depth, several limitations must be acknowledged. First, the sample was concentrated in selected universities and disciplines, which may limit generalizability across the diverse Chinese higher education system. Second, the data relied on self-reported perceptions, which may be influenced by biases such as social desirability. Third, the study was cross-sectional, providing only a snapshot rather than evidence of long-term outcomes. These limitations should be considered when interpreting the findings. The study did not undergo full IRB review; instead, it followed the university’s policy for anonymous, minimal-risk surveys with informed consent. We acknowledge that journal policies may vary regarding ethics review requirements.

Directions for Future Research

Future studies could address these limitations by adopting **longitudinal designs** to trace how OBE influences student outcomes over time. Expanding the sample to include more diverse institutions and disciplines would enhance generalizability. Moreover, incorporating the perspectives of multiple stakeholders—including faculty, administrators, and employers—would provide a more holistic understanding of OBE implementation. Comparative studies across different national contexts could also illuminate shared challenges and localized adaptations, enriching the global conversation on OBE.

Summary

In sum, this study highlights both achievements and shortcomings in the implementation of OBE in Chinese higher education. Students recognize improvements in outcome clarity, constructive alignment, and exposure to innovative pedagogies, but they also experience persistent barriers such as lecture-dominated instruction, lack of personalized support, and underdeveloped critical thinking. These findings reinforce the importance of refining constructive alignment, adapting OBE to cultural contexts, and integrating innovation and technology. Achieving meaningful reform will require sustained efforts from faculty, institutions, and policymakers alike, as well as continued empirical research to monitor progress and identify areas for improvement.

Conclusion

This study set out to explore the implementation of Outcome-Based Education (OBE) in Chinese higher education from the student perspective. By employing a mixed-methods sequential explanatory design that combined survey data from 525 undergraduates with semi-structured interviews of 12 participants, the research offers a nuanced and empirically

grounded account of how students perceive OBE, the challenges they encounter, their experiences with innovative pedagogies and digital technologies, and the outcomes they associate with this reform.

The findings indicate that OBE has achieved **partial but meaningful success** in China. Students generally recognize improvements in the clarity of learning outcomes and the alignment of teaching and assessment, reflecting progress toward constructive alignment. They also value exposure to innovative pedagogies such as project-based learning and flipped classrooms, as well as the integration of digital platforms that support engagement and self-directed learning. Reported gains in teamwork, self-regulation, and employability suggest that OBE has positively influenced skill development and overall satisfaction.

At the same time, **persistent challenges remain**. The dominance of lecture-based pedagogy, insufficient personalized support, rigid curricula, and the underdevelopment of critical thinking skills continue to constrain OBE's transformative potential. Students often perceive OBE as more rhetorical than practical, with institutional commitments not fully translating into classroom realities. These findings reveal a **dual reality**: while OBE is advancing on the surface, structural and cultural barriers hinder its deeper implementation.

Theoretical Contributions

This study makes three contributions to the theoretical understanding of OBE:

- i. **Refinement of Constructive Alignment:** By highlighting the mediating roles of outcome clarity and feedback, the study extends Biggs and Tang's (2011) model, showing that alignment must be accompanied by transparent communication and formative guidance.
- ii. **Contextual Adaptation:** The persistence of lecture-dominated instruction and exam-oriented traditions illustrates the need to adapt OBE to cultural and structural realities in China. This challenges universalist models of OBE and emphasizes the importance of localizing educational reforms.
- iii. **Integration of Innovation and Technology:** By documenting student experiences with flipped classrooms, project-based learning, and digital platforms, the study reinforces the argument that technological and pedagogical innovations are integral—not peripheral—to effective OBE implementation.

Practical and Policy Implications

The findings provide several practical insights for advancing OBE in China:

- i. **Faculty Development:** Instructors require sustained training to move beyond lecture-based teaching and to integrate active learning strategies. Emphasis should also be placed on providing constructive feedback, which students identified as a major gap.
- ii. **Curricular Flexibility:** Universities should reduce structural rigidity and create space for project-based, interdisciplinary, and student-driven learning. Such flexibility is essential to align with OBE principles and to foster critical thinking.
- iii. **Digital Infrastructure:** Investment in learning management systems, AI-assisted tools, and blended learning environments is crucial for supporting scalable, personalized, and outcome-focused education.
- iv. **University–Industry Partnerships:** Stronger collaboration with employers can ensure that OBE outcomes are aligned with labor market demands, thereby enhancing the

- relevance of higher education to graduate employability.
- v. **Policy Incentives:** Policymakers should link faculty evaluation and institutional recognition to teaching quality and student outcomes, rather than research output alone, to incentivize genuine engagement with OBE practices.

Limitations

This study has several limitations. First, the sample was concentrated in selected universities and disciplines, which may limit the generalizability of findings across the wider Chinese higher education sector. Second, the data relied on self-reported perceptions, which may not always reflect actual performance outcomes. Third, the study adopted a cross-sectional design, offering a snapshot rather than longitudinal insights into the long-term effects of OBE. These limitations should be addressed in future research to strengthen the evidence base.

Future Research Directions

Future studies could adopt **longitudinal designs** to trace how OBE influences student learning outcomes, employability, and professional trajectories over time. Expanding the sample to include more diverse institutions, including vocational and private universities, would enhance representativeness. Incorporating perspectives from multiple stakeholders—such as faculty, administrators, and employers—would provide a holistic view of OBE implementation and its impact. Comparative research across different cultural and national contexts could also illuminate how OBE principles are adapted in diverse environments, offering lessons for both China and the global higher education community.

Concluding Remarks

In conclusion, this study provides evidence that OBE in Chinese higher education has made progress but remains incomplete. Students appreciate the clarity of outcomes, constructive alignment, and exposure to innovation, but systemic challenges constrain the full realization of OBE's promise. The findings reinforce the need for **context-sensitive adaptation, faculty empowerment, and technological integration** to advance truly student-centered learning. By addressing these challenges, Chinese universities can move closer to preparing graduates with the competencies necessary for the 21st-century knowledge economy, while also contributing to the global dialogue on sustainable higher education reform.

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