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DESIGN AND EVALUATION OF AN OBE-BASED UNDERGRADUATE COURSE ON THE FUNDAMENTALS OF ENTREPRENEURSHIP IN CHINA

DESENHO E AVALIAÇÃO DE UM CURSO DE GRADUAÇÃO BASEADO EM OBE SOBRE OS FUNDAMENTOS DO EMPREENDEDORISMO NA CHINA

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Abstract
In the context of China's growing emphasis on innovation and entrepreneurship, higher education institutions are under increasing pressure to reform entrepreneurship education and better equip students for future challenges. This study investigates the effectiveness of applying the Outcome-Based Education (OBE) approach to an undergraduate entrepreneurship course, in comparison to traditional instructional methods. A quasi-experimental design was employed at a public university in Hebei Province to maintain ecological validity. The experimental group, comprising 39 students, received OBE-based instruction, while the control group, consisting of 36 students, followed a conventional teaching model. The findings demonstrate that the OBE approach produced significantly positive effects on key constructs derived from Social Cognitive Career Theory (SCCT), with the experimental group outperforming the control group across all major indicators. These results provide empirical support for the intergration of OBE into entrepreneurship education and offer practical recommendations for enhancing pedagogical practices within Chinese higher education.

Keywords: Entrepreneurship Education, Outcome-Based Education (OBE), Social Cognitive Career Theory (SCCT), Entrepreneurial Intention, Higher Education Reform.

Resumo
No contexto da crescente ênfase da China na inovação e no empreendedorismo, as instituições de ensino superior estão sob pressão crescente para reformar o ensino do empreendedorismo e preparar melhor os alunos para os desafios futuros. Este estudo investiga a eficácia da aplicação da abordagem da Educação Baseada em Resultados (OBE) a um curso de empreendedorismo de graduação, em comparação com os métodos de ensino tradicionais. Um desenho quase experimental foi empregado em uma universidade pública na província de Hebei para manter a validade ecológica. O grupo experimental, composto por 39 alunos, recebeu instrução baseada na OBE, enquanto o grupo de controle, composto por 36 alunos, seguiu um modelo de ensino convencional. Os resultados demonstram que a abordagem OBE produziu efeitos significativamente positivos em conceitos-chave derivados da Teoria Cognitiva Social da Carreira (SCCT), com o grupo experimental superando o grupo de controle em todos os principais indicadores. Esses resultados fornecem suporte empírico para a integração da EBO na educação empreendedora e oferecem recomendações práticas para aprimorar as práticas pedagógicas no ensino superior chinês.

Palavras-chave: *Educação Empreendedora. Educação Baseada em Resultados (EBO). Teoria Cognitiva Social da Carreira (SCCT). Intenção Empreendedora. Reforma do Ensino Superior.*

1 INTRODUCTION

Outcome-Based Education (OBE) has garnered increasing attention as an educational paradigm that emphasizes the articulation of clear learning objectives and the attainment of measurable outcomes (Rao, 2020). Despite its demonstrated pedagogical efficacy, the adoption of OBE principles remains limited within Chinese higher education institutions (Gurukkal, 2020). In response, numerous scholars have advocated for a pedagogical transition from traditional teacher-centred models toward outcome-oriented frameworks that incorporate flexible instructional strategies and diversified assessment mechanisms to foster more engaging and student-centered learning environments. For example, Zhao *et al*. (2016) illustrated the effective integration of OBE principles within management education by aligning instructional goals with learning outcomes, thereby offering transferable insights for other academic disciplines. Similarly, Fan and Guan (2017) found that the application of OBE in English language instruction significantly enhanced student engagement, task participation, and overall academic performance. Building upon these findings, the present study adopts an OBE framework for the design and implementation of an entrepreneurship course.

This study is further grounded in Bandura's Social Cognitive Theory, particularly the Social Cognitive Career Theory (SCCT), which posits that individual career development is the result of dynamic interactions among personal attributes, environmental conditions, and behavioural factors (Lent & Brown, 1996). The applicability of SCCT to entrepreneurial development has been supported by empirical research (Krueger *et al*., 2000). Within this framework, entrepreneurship courses can be conceptualized as structured learning environments that serve as influential environmental factors. According to SCCT, entrepreneurial intentions are shaped not only by external stimuli but also by personal variables such as self-efficacy and outcome expectations (Bandura, 2001). Higher levels of these personal attributes are frequently associated with greater behavioral engagement in learning activities, which has been identified as a critical determinant of educational success (Schneider & Preckel, 2017). Consequently, the cultivation of entrepreneurial intention is intrinsically linked to students' learning engagement, underscoring the importance of pedagogical models that actively foster such involvement.

2 LITERATURE REVIEW

2.1 The Concept of OBE and Related Studies

Outcome-Based Education (OBE) is an instructional paradigm that places student learning outcomes at the center of the educational process, emphasizing the development of specific competencies and the achievement of demonstrable results. It adopts a backward design and forward implementation model, wherein educators first identify the desired learning outcomes and then align teaching strategies and assessment methods accordingly to ensure coherence and goal alignment (Spady, 1982). In recent years, OBE has been increasing applied in higher education as a strategy for improving instructional quality and enhancing student achievement. Empirical studies have demonstrated that the implementation of OBE contributes to the development of students' autonomous learning capacity, critical thinking, and creative problem-solving abilities, thereby enhancing their overall competitiveness in the labor market.

2.2 Social Cognitive Career Theory (SCCT)

Social Cognitive Career Theory (SCCT) offers a comprehensive framework for understanding how personal attributes, behavioural patterns, and environmental factors interact to shape individuals' career trajectories and professional development (Brown *et al*., 2013). In the context of the present study, SCCT is used to elucidata the mechanisms by which entrepreneurship courses influence students' entrepreneurial intentions. Particular attention is given to SCCT's core constructs—self-efficacy, outcome expectations, and goal setting—and how these interact with course design, pedagogical strategies, and evaluation practices to shape students' entrepreneurial beliefs, motications, and attitudes. By integrating SCCT, the study aims to provide a nuanced understanding of how entrepreneurship education fosters entrepreneurial propensity.

2.3 Entrepreneurial Self-Efficacy

Entrepreneurial self-efficacy refers to an individual's belief in their capability to successfully execute tasks and roles associated with entrepreneurship activity

(Waddington *et al*., 2023). This construct plays a pivotal role in shaping entrepreneurial behaviour and outcomes. Individuals with high levels of entrepreneurial self-efficacy tend to exhibit greater confidence in their entrepreneurial capabilities and more willing to invest sustained effort in entrepreneurial pursuits. Within the scope of this study, entrepreneurial self-efficacy pertains specifically to students' confidence in applying entrepreneurial skills during the completion of course-related tasks. Enhancing this form of self-efficacy is expected to promote increased enthusiasm for entrepreneurial endeavors and to strengthen entrepreneurial intention.

2.4 Learning engagement

Learning engagement is defined as a positive psychological state characterized by high energy, persistence, intrinsic motivation, and deep involvement in the learning process (Li & Huang, 2010). It is widely regarded as a critical predictor of academic performance and learning effectiveness. Students who exhibit high engagement levels are typically more capable of assimilating and applying new knowledge, leading to improved academic outcomes. In the realm of entrepreneurship education, learning engagement not only facilitates the mastery of entrepreneurial knowledge and skills but also nurtures creativity, resilience, and problem-solving capacity—key attributes for aspiring entrepreneurs.

2.5 Outcome expectation

Outcome expectation refers to an individual's cognitive anticipation of the consequences of engaging in a specific behaviour and the perceived value or disirability of those outcomes (Tian, 2024). In entrepreneurship, outcome expectations significantly shape individuals' motivational states and decision-making process. Positive expectations regarding the benefits of entrepreneurial activity can enhance one’s intention and readiness to undertake entrepreneurial initiatives, while negative expectations may deter such behavior. Thus, entrepreneurship education should aim to foster positive outcome expectations in students as a means of cultivating and reinforcing their entrepreneurial intentions.

2.6 Entrepreneurial intention

Entrepreneurial intention denotes an individual's conscious inclination or willingness to initiate entrepreneurial activities and is considered a robust predictor of actual entrepreneurial behaviour (Sharma *et al*., 2025). In the context of this study, entrepreneurial intention refers specifically to the psychological disposition of Chinese undergraduate students refers specifically to the psychological disposition of Chinese undergraduate students following their participation in an entrepreneurship course. To comprehensively assess entrepreneurial intention, this study employs a mixed-methods approach that combines standardized quantitative instruments with qualitative interviews. By exploring the antecedents and influencing mechanisms of entrepreneurial intention, the research seeks to provide practical, evidence-based recommendations for enhancing entrepreneurship education in higher education institutions.

3 THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

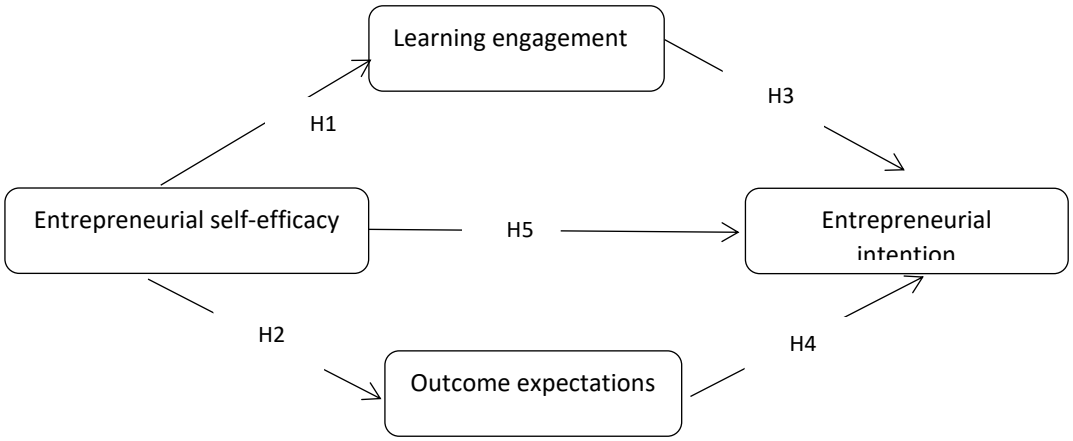
This study adopts Social Cognitive Career Theory (SCCT) as its theoretical foundation to construct the research model. SCCT provides a robust framework for explaining how individuals' self-beliefs influence their learning behaviours and the outcomes resulting from educational interventions.

3.1 Research model

Drawin on SCCT, this study proposes a series of hypotheses and develops a research model to explore the relationships among entrepreneurial self-efficacy, learning engagement, outcome expectations, and entrepreneurial intention, as depicted in Figure 1.

Figure 1

The Proposed Research Model Based on Social Cognitive Career Theory (SCCT)



3.2 Research hypotheses

3.2.1 Entrepreneurial Self-efficacy and Learning Engagement

Self-efficacy, defined as individual's beliefs and judgements regarding their capabilities, exerts a substantial influence on learning behaviour. Within the OBE-based Fundamentals of Entrepreneurship course, it is hypothesized that higher levels of entrepreneurial self-efficacy will lead to greater learning engagement. Prior research supports this proposition; for example, Bassi *et al*. (2007) and Ambarita and Butar (2024) found positive associations between self-efficacy and learning engagement, while Gangadhara and Kumar (2024) and Shao and Kang (2022) confirmed that students with higher self-efficacy demonstrate greater engagement in learning activities. Accordingly, the following hypothesis is proposed:

H1: Entrepreneurial self-efficacy has a positive effect on learning engagement.

3.2.2 Entrepreneurial Self-efficacy and Outcome Expectations

According to Social Cognitive Theory, self-efficacy directly influences individuals' expectations regarding the outcomes of their behavior. In the context of entrepreneurship education, it is hypothesized that students with higher entrepreneurial self-efficacy are more likely to maintain positive expectations about entrepreneurial outcomes. This hypothesis is consistent with the theoretical foundation of SCCT and is

supported by empirical evidence from Liguori *et al*. (2020) Guo(2021), and Qu (2022), who found that individuals with stronger self-efficacy exhibit more optimistic expectations in entrepreneurial or job-seeking contexts. Thus, the following hypothesis is proposed:

H2: Entrepreneurial self-efficacy has a positive effect on outcome expectations.

3.2.3 Outcome Expectations and Entrepreneurial Intention

Within the *Fundamentals of Entrepreneurship* course, students who hold more positive expectations regarding entrepreneurial outcomes are presumed to exhibit stronger entrepreneurial intentions. Prior research has demonstrated that favorable outcome expectations stimulate positive emotions, enhance goal-directed behaviors, and improve self-regulation. For example, Liang *et al*. (2019) found outcome expectations to be a significant predictor of employability, while Tang (2021) and Blaese *et al*. (2021) confirmed the predictive power of outcome expectations on entrepreneurial intention. Therefore, this study proposes:

H3: Outcome expectations have a positive effect on entrepreneurial intention.

3.2.4 Learning Engagement and Entrepreneurial Intention

Within the Fundamentals of Entrepreneurship course, students' levels of learning engagement is posited to exert a direct influence on their entrepreneurial intentions. Accordingly, this study hypothesises that higher levels of learning engagement will correspond to stronger entrepreneurial intentions. This proposition highlights the critical role of learning engagement as a mediating mechanism linking educational practices to entrepreneurial motivation. Learning engagement reflects students' active involvement in meaningful academic activities and sustained commitment to achieving learning objectives. Extensive prior research has consistently associated high-quality engagement with academic success (Skinner & Pitzer, 2012). In the context of entrepreneurship education, Yang *et al*. (2021) confirmed that learning engagement positively predicts students' entrepreneurial intention. Furthermore, learning engagement serves not only to facilitate knowledge acquisition but also to foster innovation and problem-solving capacities essential for entrepreneurial pursuits (Elshami *et al*., 2022). Conversely,

insufficient engagement and dissatisfaction with the learning environment have been shown to impede academic and entrepreneurial outcomes (Haque *et al*., 2024; Almasri, 2022). Based on these considerations, the following hypothesis is proposed:

H4: Learning engagement has a positive effect on entrepreneurial intention.

3.2.5 Entrepreneurial Self-efficacy and Entrepreneurial Intention

Entrepreneurial self-efficacy, defined as one's belief in their capability to successfully perform entrepreneurial tasks, is widely recognised as a significant antecedent of entrepreneurial intention and a foundamental predictor of entrepreneurial career choice (Boyd &Vozikis, 1994). This psychological construct not only fosters confidence in entrepreneurial ability but also enhances resilience when confronting entrepreneurial risks and setbacks (Yang *et al*., 2021) Prior studies have demonstrated that entrepreneurial self-efficacy positively influences entrepreneurial intention, both directly and indirectly, through partial mediation by outcome expectations (Santos & Liguori, 2019). Wang *et al*. (2022) further confirmed the robust predictive effect of self-efficacy on entrepreneurial goal setting. Thus, individuals with higher entrepreneurial self-efficacy are more likely to establish and pursue entrepreneurial goals. In light of these findings, this study proposes the following hypothesis:

H5: Entrepreneurial self-efficacy has a positive effect on entrepreneurial intention.

3.2.6 The Enhancing Effect of OBE on the Research Model

The integration of OBE serves to enhance the robustness and practical applicability of the research model in several dimensions:

First, OBE reinforces the outcome-oriented focus of the model, shifting the emphasis from content delivery to the attainment of well-defined educational objectives. Unlike traditional instructional methods that prioritize curriculum completion, OBE centers on the measurable realization of student learning outcomes, including entrepreneurial self-efficacy, learning engagement, outcome expectations, and ultimately, entrepreneurial intention. By establishing explicit educational goals and adopting a results-driven approach, the effectiveness of entrepreneurship education can be assessed

with greater precision, enabling more targeted pedagogical improvements.

Secondly, OBE allows for deeper analysis and optimisation of the interralationships among the model's variables. Grounded in its learner-centered philosophy, OBE acknowledges individual differences and diverse learning needs, thereby facilitating a more comprehensive exploration of how entrepreneurial self-efficacy, engagement, outcome expectations, and intention interact dynamically. This enables continuous, data-driven adjustments to course design based on student deedback and leraning outcomes.

Additionally, OBE enhances the practical relevance of the research findings. The outcome-driven nature of OBE allows research insights to be directly applied to curriculum refinement. Modifications to instructional content, teaching methodologies, and assessment strategies informed by this model can effectively foster students' entrepreneurial development. Consequently, this practice-oriented research not only advances entrepreneurship education quality but also offers valuable guidance for reforming broader educational programs.

In summary, the intergration of OBE enriches the research model by centering on learning outcomes, deepening the understanding of variable interrelationships, and enhancing the model's practical relevance. These enhancements contribute to the theoretical robustness and practical utility of the study, offerig comprehensive support for advancing entrepreneurship education.

3.3 Research methodology

This study employs a quasi-experimental design, an approach that eschews random assignment but strives for homogeneity between control and experimental groups. Participants were grouped based on course schedules and individual perferences. Efforts were undertaken to ensure comparability across gender, age, academic background, and academic performance. Undergraduate students from various disciplines were allocated into two groups: the control group followed a traditional instructional model, whereas the experimental group received instruction through an OBE-based curriculum emphasizing active learning, critical thinking, and innovation. Data were collected through a combination of pre- and post-test questionnaires, project assignments, and final reports. Additional feedback was gathered via student satisfaction surveys and

teacher evaluations. Quantitative data were analyzed using statistical software, while qualitative data were examined through content analysis. This mixed-methods approach facilitated a comprehensive assessment of whether the OBE-based instructional design effectively enhanced students' academic performance, learning engagement, and entrepreneurial intentions, thereby providing valuable insights for future curriculum reform and pedagogical innovation.

3.4 Participants and procedure

The participants in this study were undergraduate students enrolled in the Fundamentals of Entrepreneurship course at a public university located in Hebei Province, China. A total of 75 students participated, with 39 students assigned to the experimental group and 36 students to the control group. The experimental group was specifically utilized to examine the relationships among entrepreneurial self-efficacy, learning engagement, outcome expectations, and entrepreneurial intention within the context of an OBE instructional framework, while also capturing student feedback on the OBE learning experience.

The teaching experiment was implemented during the autumn semester of 2023. Following the approval of the research protocol by the university's administrative authorities, two course sections of Fundamentals of Entrepreneurship were invited to participate. All participants were informed of the voluntart nature of their participation, assured that all collected data would remain confidential, and explicitly advised that their involvement would have no impact on their academic grades or evaluations. Informed consent was obtained from all participating students prior to the commencement of the course.

Before the formal start of instruction, the students received an orientation session introducing the principles, objectives, and significance of OBE-based learning. At the conclusion of the sixth instructional week, the instructor distributed an online questionnaire via Wenjuanxing, one of the most widely used online survey platforms in China. To minimize potential social desirability bias, participants were explicitly encouraged to respond candidly. All data collected were anonymized and handled with strict confidentiality throughout the research process.

3.5 Research Instruments

3.5.1 Entrepreneurial Self-efficacy

Entrepreneurial self-efficacy was assessed using the scale developed by Marlino and Wilson (Wilson *et al*., 2007) originally designed for adolescents and MBA student populations. Considering the demographic similarities, this instrument was deemed suitable for Chinese undergraduate students. The scale consists of six items rated on a five-point Likert scale. The scale demonstrated high internal consistency, with a Cronbach's alpha coefficient of 0.898, and satisfactory samoling adequacy, indicated by a Kaiser-Meyer-Olkin (KMO) value of 0.783.

3.5.2 Outcome expectations

Outcome expectations were measured using an adapted version of the instrument revised by Sheppard *et al*. (2023), based on the original scale developed by Duong *et al*. (2024a). Although Ji's version was initially intended for Chinese adolescents, its structure and content were deemed appropriate for this study's undergraduate sample. The full scale contains 12 items across two dimensions: near-term outcome expectations (seven reverse-coded items) and future outcome expectations (five items). Since this study specifically focuses on the influence of future expectations on entrepreneurial intention, only the five future-oriented items were utilized. Responses were collected on a five-point Likert scale. The English version of the scale underwent multiple rounds of translation and back-translation by two psychology professors and seven postgraduate students specializing in psychology and English, ensuring linguistic and conceptual accuracy. The scale exhibited strong reliability (Cronbach's $\alpha = 0.889$) and excellent sampling adequacy (KMO = 0.845).

3.5.3 Learning engagement

Learning engagement was measured using the College Student Learning Engagement Scale revised by Li (2010), which is an adaptation of the Utrecht Work Engagement Scale – Student version (UWES–S) originally designed by Tampouri *et al*.

(2023). This version was specifically modified to align with the cultural and educational context of Chinese university students. The instrument comprises 17 items assessed on a seven-point Likert scale. The scale demonstrated excellent internal consistency, with a Cronbach's alpha of 0.904, and a KMO value of 0.852, indicating strong reliability and sampling adequacy.

3.5.4 Entrepreneurial intention

Entrepreneurial intention was measured using a scale adapted by Hu *et al*. Derived from the instrument originally developed by Phan (2002). The wording of the instrument was revised to align with the characteristics of the Chinese university student population, making it suitable for the target participants of this study. Responses were recorded on a five-point Likert scale. The scale demonstrated excellent psychometric properties, with a Cronbach's alpha of 0.927 and a KMO value of 0.828.

4 RESULTS AND DISCUSSION

This study employed SPSS and AMOS software to conduct the statistical analysis examining the relationships among entrepreneurial self-efficacy, learning engagement, outcome expectations, and entrepreneurial intention. The results of the validation procedures and subsequent analyses are apresented as follows.

4.1 Item analysis

An item analysis was performed to evaluate the quality and discriminatory power of each questionnaire item using multiple measurement indicators. Items failing to meet established standards were either revised or removed to ensure the psychometric adequacy of the final scales (Duong *et al*., 2024b). The external validity of the items was assessed to evaluate the explanatory scope of the study (Haque *et al*., 2024). The results of the item analysis are presented in Table 1.

Table 1

Items analysis of scales

	Item–Total correlation	Corrected item–Total correlation	Cronbach's alpha if item deleted	Critical Ratio (C.R.) from independent samples t-test
Criteria	≥.400	≥.400	<.974	≥3.000
Entrepreneurial self-efficacy	.682***~.950***	.552~.751	.887~.895	8.695***~18.335***
Outcome expectation	.604***~.866***	.502~.796	.830~.858	5.198***~13.479***
Learning engagement	.430***~.761***	.548~.841	.892~.904	3.859***~9.229***
Entrepreneurial intention	.781***~.896***	.619~.829	.883~<.974	9.208***~13.543***

Note: ***$p < .001$.

4.2 Reliability and validity analysis

Prior to conducting path analysis, the reliability and validity of each measurement model (i.e., each construct) were assessed. Cronbach's alpha was used to evaluate the internal consistency of the scales, while composite reliability (CR) was calculated to assess construct reliability. All retained items met the recommended thresholds suggested by Hair *et al*. (2019). The standardized factor loadings (FL) for all items ranged from 0.536 to 0.967, indicating acceptable convergent validity. Detailed results are presented in Table 2.

Table 2

Reliability and validity analysis

Variables	M	SD	Cronbach alpha	KMO	FL
Entrepreneurial self-efficacy	2.65	0.87	0.898	.783	.770~.967
Outcome expectation	2.84	0.94	0.889	.845	.536~.933
Learning engagement	2.65	0.65	0.904	.852	.561~.843
Entrepreneurial intention	2.93	1.09	0.927	.828	.874~.946

4.3 Model fit analysis

Model fit analysis was conducted as a prerequisite for validating the structural model and performing path analysis. According to established criteria, a good model fit is indicated when the chi-square to degrees of freedom ratio (χ^2/df) is less than 5 (Hair *et al*., 2019), the Root Mean Square Error of Approximation (RMSEA) is less than 0.080, and the Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Normed Fit Index (NFI), and Comparative Fit Index (CFI) all exceed 0.800 (Abedi *et al*., 2025).

The model fit indices obtained in this study were as follows: χ^2/df = 1.439, RMSEA = 0.078, GFI = 0.981, AGFI = 0.814, CFI = 0.973, and IFI = 0.979, as shown in Table 3. These results indicate that the model demonstrates an acceptable fit, providing a robust foundation for hypothesis testing.

Table 3

Model Fit Indices

Fit Index	Recommended Criterion	Observed Value
χ^2/df	＜3	1.439
GFI	Acceptable > .800; Ideal > .900	.981
AGFI	Acceptable > .800; Ideal > .900	.814
NFI	＞.900	.935
IFI	＞.900	.979
CFI	＞.900	.973
RMSEA	＜.080	.078

Note: The data are compiled from this study.

4.4 Path analysis

A multi-group path analysis was performed by separately incorporating the experimental and control group samples into the structural equation model. The models were estimated using the maximum likelihood estimation method. The standardized path coefficients for both groups are presented in Table 4, ensuring comparability between the two models, referred to here as Model 1 and Model 2.

Table 4

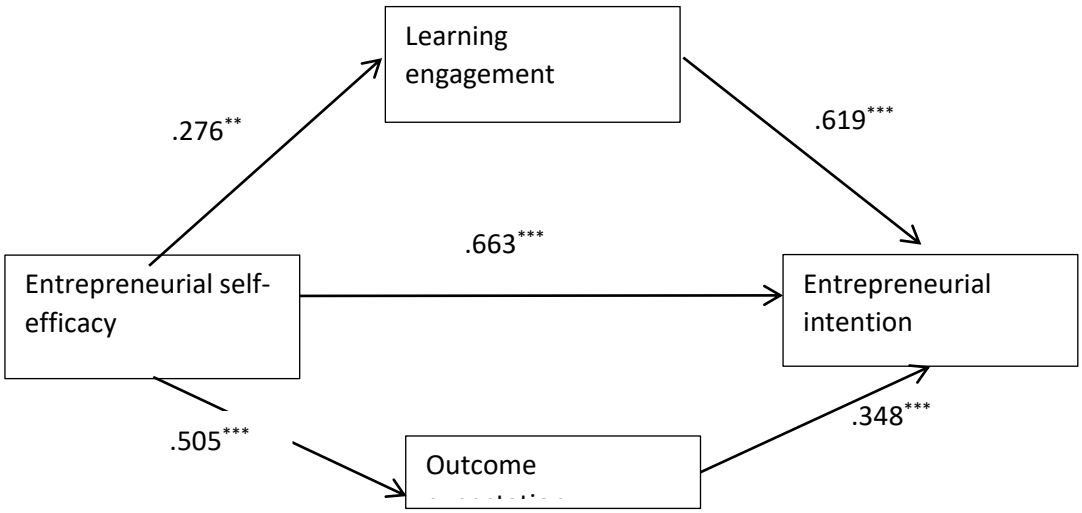
Standardized Path Coefficients for Experimental and Control Groups

Model path	Model 1: Experimental group	Model 2: Control group	Critical Ratio (C.R.) from *t*-test
Entrepreneurial self-efficacy →Learning engagement	.276**	-.210	2.691***
Learning engagement→ Entrepreneurial intention	.619***	-.066	2.347**
Entrepreneurial self-efficacy →Entrepreneurial intention	.663***	.200	1.934
Outcome expectation→Entrepreneurial intention	.348***	-.130	2.219**
Entrepreneurial self-efficacy →Outcome expectation	.505***	.272	1.554

Note: ***p < .001 ; **p < .01.

Figure 2

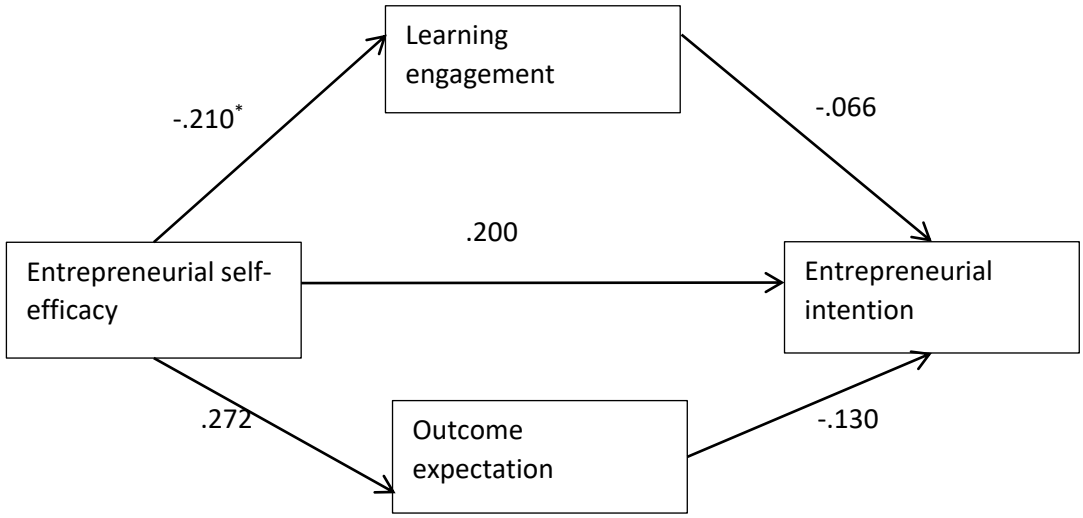
Path analysis of the experimental group



Note: $^{***}p < .001$.

Figure 3

Path analysis of the control path



Note: $^{*}p < .05$.

A comparison of the path diagrams (Figures 2 and 3) reveals statistically significant differences between the two models ($p < .050$). Specifically, significant group differences were identified in the following relationships: entrepreneurial self-efficacy → learning engagement, learning engagement → entrepreneurial intention, and outcome

expectation → entrepreneurial intention ($p < .050$). In each case, the critical ratio (C.R.) exceeded the threshold value of 1.960, indicating significant differences between the experimental and control groups.

5 DISCUSSION

5.1 The positive influence of entrepreneurial self-efficacy on outcome expectation

The results of this study demonstrate that entrepreneurial self-efficacy exerts a significant positive effect on outcome expectations. This result is consistent with prior empirical research (Pham & Le, 2023; Guo *et al*., 2023). Students possessing higher levels of entrepreneurial self-efficacy are more likely to believe in ttheir capabilities to succeed in entrepreneurship endeavors and, consequently, tend to hold more favorable expectations regarding entrepreneurial outcomes. The findings further suggest that, compared to traditional instructional models, OBE-based entrepreneurship education is more effective in enhancing students'entrepreneurial self-efficacy and their corresponding expectations concerning potential entrepreneurial achievements.

5.2 The positive influence of entrepreneurial self-efficacy on learning engagement

This study also identifies a significant positive relationship between entrepreneurial self-efficacy and learning engagement, aligning with the conclusions of Lei (2010), and Nwokolo and Ahaneku (2021). Studuents with higher entrepreneurial self-efficacy exihibit a stronger propensity to engage actively in collaborative learning and peer interaction. OBE-based curricula may provide more effective pedagogical frameworks to foster entrepreneurial self-efficacy, which in turn promotes deeper learning engagement and improved educational outcomes (Yu *et al*., 2020). While traditional courses often prioritize knowledge delivery through lecture-based instruction, potentially confining students within a fixed pedagogical structure, OBE courses emphasize flexible, student-centered learning environments. Such flexibility appears to be more conducive to fostering both entrepreneurial self-efficacy and learning engagement.

5.3 The positive influence of learning engagement on entrepreneurial intention

The results further reveal that learning engagement significantly contributes to the enhancement of entrepreneurial intention, which is consistent with previous studies (Sheppard *et al*., 2023). Greater student investment in learning fosters a deeper understanding of entrepreneurial knowledge, stronger internalization of entrepreneurial values, and subsequently, a heightened willingness to engage in entrepreneurial activities. Moreover, OBE-based courses have been shown to facilitate the development of students' problem-solving capacities and innovative thinking, thereby strengthening their overall entrepreneurial competence. Xuan and Liu (2023) illustrated how OBE empowers entrepreneurship education by adopting innovative pedagogical strategies aimed at cultivating creativity and problem-solving skills, which ultimately reinforce entrepreneurial intention. Participation in OBE courses, by enhancing learning engagement, thus serves as an effective catalyst for stimulating students' entrepreneurial motivation (Peng *et al*., 2024).

5.4 The positive influence of outcome expectation on entrepreneurial intention

The findings also confirm that outcome expectations exert a significant positive influence on entrepreneurial intention, corroborating the results of prior studies (Krueger *et al*., 2000; Liguori *et al*., 2020). The clear learning objectives and practical entrepreneurial content embedded within OBE-based courses appear particularly effective in nurturing students' entrepreneurial intentions. In contrast, traditional curricula, which often emphasize theoretical knowledge transmission rather than outcome-oriented learning, may fail to sufficiently integrate practical applications and clearly defined learning goals. As a consequence, students in conventional learning environments may develop less concrete outcome expectations, thereby weakening their entrepreneurial intentions (Sharma *et al*., 2025).

5.5 The positive influence of entrepreneurial self-efficacy on entrepreneurial intention

Finally, the study confirms that entrepreneurial self-efficacy serves as a significant

predictor of entrepreneurial intention, consistent with the findings of Chen *et al*. (2017), Krueger (1993), Krueger and Brazeal (1994), Li (2017), Rauch *et al*. (2019). According to the career choice model, entrepreneurial self-efficacy directly shapes individuals' entrepreneurship goal intentions. Mahrishi *et al*. (2025) further emphasized that OBE-based entrepreneurship education not only enhances students' entrepreneurial self-efficacy but also strengthens their entrepreneurial intention by equipping them with the necessary competencies and confidence to pursue entrepreneurial ventures.

6 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

In contemporary higher education, institutions are increasingly expected to implement student-centred educational models that effectively support talent cultivation and ensure the efficient delivery of instruction. At the core of OBE lies a focus on results-oriented teaching, wherein students are positioned at the center of the learning process. Compared to traditional instructional models, OBE offers a more systematic alignment between learning outcomes, teaching activities, and assessments, thereby enhancing instructional quality and educational effectiveness (Keo *et al*., 2025). Unlike conventional classrooms, where instructors typically control the instructional flow, OBE redefines the role of instructors as facilitators who promote independent thinking, provide timely feedback, and create supportive learning environments conducive to active student engagement (Wang *et al*., 2022). Such an approach is better aligned with the evolving demands of modern education systems.

This study, grounded in Social Cognitive Career Theory, investigated the interrelationships among entrepreneurial self-efficacy, learning engagement, outcome expectations, and entrepreneurial intention. The key empirical findings are as follows:

(1) Entrepreneurial self-efficacy has a significant positive influence on outcome expectations;

(2) Entrepreneurial self-efficacy positively affects learning engagement;

(3) Learning engagement positively influences entrepreneurial intention;

(4) Outcome expectations significantly predict entrepreneurial intention;

(5) Entrepreneurial self-efficacy directly promotes entrepreneurial intention.

Collectively, these findings confirm the proposed theoretical model and emphasize the value of OBE-based entrepreneurship education in fostering entrepreneurial competencies and enhancing entrepreneurial intentions among undergraduate students.

6.2 Limitations and recommendations

Despite its contributions, this study is subject to several limitations that should be acknowledged.

First, the sample was limited to undergraduate students enrolled at a single public university in Hebei Province, China. As such, the findings primarily reflect the attitudes and behaviours of a specific institutional and regional context. Although the study offers valuable insights into this population, the generalizability of the results remains constrained. As noted by Passaro *et al*. (2018), entrepreneurial intention is shaped by a complex interplay of educational, cultural, and contextual factors, and variations in regional educational systems and resource availability may influence how such intentions are formed. Future studies should expand the geographic scope and institutional diversity of the sample to enhance external validity and better capture the heterogeneity of student populations across different cultural and educational settings (Ercikan & Roth, 2014).

Second, this study primarily employed self-report questionnaires as its main data collection instrument. While surveys offer practical advantages in terms of efficiency and scalability, the reliance on self-reported data may introduce social desirability bias, whereby participants present themselves in a more favorable light (Harris & Brown, 2019). To address this limitation, future research may adopt a mixed-methods approach, incorporating qualitative methods such as interviews, focus groups, or classroom observations. Such approaches would allow for deeper insights into the mechanisms, challenges, and contextual factors influencing entrepreneurial intention among Chinese undergraduate students. Furthermore, triangulating data from multiple sources may support the development of more targeted, evidence-based entrepreneurship curricula, and enrich the overall depth and breadth of research in this domain (Mishra *et al*., 2019).

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

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

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