

Integrating Teaching Strategies, Motivation, and Self-Efficacy to Develop Students' Entrepreneurial Orientation

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Abstract: This study explores how teaching strategies and entrepreneurial motivation influence students' entrepreneurial self-efficacy. A survey was conducted with 990 students from Southwest China, and structural equation modeling (SEM) was employed to test the research hypotheses. Hayes's bootstrapping method was also used to examine how entrepreneurial self-efficacy served as a mediator between teaching strategies, entrepreneurial motivation, and students' entrepreneurial orientation. The results found that teaching strategies and entrepreneurial motivation positively and significantly affected students' self-efficacy, which have important implications for educators and policymakers. Specifically, entrepreneurial motivation was identified as a crucial factor that fosters self-efficacy, serving as an essential mediator linking entrepreneurial education to students' entrepreneurial orientation. This result implies that universities should incorporate interactive learning methods, case studies, and goal-setting workshops into their curricula to strengthen students' entrepreneurial orientation. Furthermore, policymakers must create supportive ecosystems that fund entrepreneurial education and provide mentorship opportunities. These initiatives can help bridge the gap between theoretical knowledge and practical entrepreneurial application by equipping students with hands-on experience and real-world problem-solving skills crucial to entrepreneurial success.

Keywords: Teaching strategies, Entrepreneurial motivation, Entrepreneurial self-efficacy, Entrepreneurial orientation, Education.

Entrepreneurship is widely recognized as a vital driver of economic growth, innovation, and job creation (Hoang et al., 2021; Otache, 2022; Romero-Sánchez et al., 2024). In developed economies, established entrepreneurial ecosystems provide access to capital, technological resources, and policy frameworks that support startups and small businesses (Yeh et al., 2021; Zhang & Chen, 2023). However, challenges such as market saturation, global competition, and the decline of traditional industries due to automation and digitization have contributed to rising unemployment, particularly among youth (Osadolor et al., 2021; Qi et al., 2024). In addition to

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these challenges, developing countries face more profound structural issues, including limited access to funding, poor infrastructure, and weak institutional frameworks, which often inhibit entrepreneurial activity and economic diversification (Snowden et al., 2024; Wardana et al., 2024). More than 267 million youth globally are not in education, employment, or training (NEETs) (International Labour Organization [ILO], 2022). In China, where formal jobs are often unattainable for Z-Gens, this problem is particularly acute (Yang et al., 2024). It also occurred in Africa and Asia, where unemployment rates are high (Junaidi et al., 2025; Kheirkhah, 2026; Wang et al., 2023). One promising solution is entrepreneurial education and programs, which are promising avenues for fostering business development and industry collaboration as urgent solutions, particularly in China, Africa, and Asia, where traditional job opportunities are limited.

Entrepreneurial programs and the education sector have been promoted as sustainable solutions for business development, collaborating with industry (Junaidi et al., 2023; Liu et al., 2022; Rasmitadila et al., 2020). These collaborations can decrease dependence on formal employment sectors and foster innovation-driven industries capable of competing in global markets. Some countries, such as China, India, and Nigeria, have increasingly turned to entrepreneurial education as a strategic intervention to cultivate entrepreneurial self-efficacy and promote polytechnic-industry partnerships (Li et al., 2020).

Nonetheless, the effectiveness of these interventions depends on business accessibility and alignment with technology trends such as e-commerce training to promote business development (Abd Rahim et al., 2022; Qi et al., 2024). This dependency means that developing countries must focus on more practical solutions to employment challenges by integrating industry collaborations and vocational training programs into entrepreneurial courses to address regional disparities, and by emphasizing skill-building programs and micro-enterprises as pathways to job creation (Bahaw et al., 2024; Patel & Oghazi, 2024). The integration of technology and practical training into entrepreneurial education is crucial for empowering students in business.

Several studies have confirmed the significance of education-based interventions in promoting entrepreneurial mindsets and self-efficacy. Entrepreneurial orientation is among the students' personal outcomes that has not been adequately investigated. Fundamentally, entrepreneurial orientation is an outcome action that is a response to the learning process (Qi et al., 2024; Zhou et al., 2024), especially among students exposed to business simulations and experiential learning methods. Unfortunately, research supporting students' entrepreneurial education and motivation for entrepreneurial orientation is lacking. Moreover, although some evidence shows that students with an entrepreneur orientation engage in innovative activities (Saoula et al., 2023; Zhou et al., 2024), no evidence confirms whether self-efficacy mediates the effects of entrepreneur education and motivation on entrepreneurship orientation. In addition, preliminary studies do not address how these models can be replicated across regions, how teaching strategies and motivation affect entrepreneurial self-efficacy and orientation, or how self-efficacy bridges the relationship between teaching strategies and motivation in relation to entrepreneurial orientation (Gultekin & Kara, 2022). Answering these questions is essential for uncovering how to integrate both practical applications and education to ensure that entrepreneurial education is accessible and effective for all students.

This study addresses significant gaps in the existing literature by proposing a multidimensional framework for entrepreneurial education that integrates industry collaborations to develop students' entrepreneurial self-efficacy. This study specifically addresses the lack of practical applications and industry partnerships in current business education models, which often prioritize theoretical instruction, by providing specific examples of how these collaborations can be implemented in curricula to enhance student learning and entrepreneurial orientation.

The results of this study offer theoretical, empirical, and practical contributions to the field of entrepreneurial education. Theoretically, it enhances our understanding of how mentorship programs can improve entrepreneurial self-efficacy through social cognitive theory. Empirically, it provides evidence from China's education and vocational programs, demonstrating how these initiatives can effectively improve entrepreneurial performance. Practically, the findings can inform policymakers and educators on how to design and implement business programs that address employment challenges and economic disparities, ultimately fostering a more inclusive entrepreneurial ecosystem.

Literature Review and Theoretical Framework

Social Learning Theory

Social learning theory provides a critical lens for examining the acquisition and application of teaching strategies in resource management and venture creation. This theory posits that individuals learn not only through direct experience but also by observing others, which is particularly relevant in educational and entrepreneurial contexts. Observational learning enables students to emulate the successful strategies of mentors and entrepreneurs, as highlighted by Mozahem and Adlouni (2021) and Salehi (2026). The research model in this study provides a framework that is essential for internalizing complex skills such as budgeting, investment planning, and risk assessment, which can be effectively taught through case studies and financial simulations. The cultivation of self-efficacy, a fundamental aspect of social learning theory, bolsters students' confidence in their capacity to perform business tasks, such as resource management and securing funding. The reinforcement and motivation aspects of the theory further emphasize the importance of a supportive learning environment in fostering business and financial competence (Gebregergis & Csukonyi, 2026). In practical applications such as business planning simulations and startup incubator programs, students gain financial acumen and cultivate the confidence necessary to navigate the entrepreneurial landscape towards integrating theoretical knowledge.

This all-encompassing method aligns with the idea of experiential learning, which aims to improve business course outcomes. These opportunities to model effective business practices are integral to entrepreneurial education, where learners benefit from observing the strategies that drive business success (Osadolor et al., 2021; Srimulyani & Hermanto, 2022). Social learning theory also underscores the role of reinforcement and motivation in promoting business and financial competence among students, suggesting that positive feedback and encouragement can significantly enhance their learning experiences and outcomes.

Teaching Strategies' Effect on Students' Entrepreneurial Self-Efficacy and Orientation

Effective pedagogical approaches influence students' ability to comprehend concepts, retain knowledge, and apply their learning in practical situations (Ammar et al., 2024; Hollenstein & Brühwiler, 2024). Teaching strategies have effects that go beyond academics; they also help students develop critical thinking, teamwork, entrepreneurial self-efficacy, and lifelong learning habits. Entrepreneurial self-efficacy is an individual's belief in their ability to perform entrepreneurial tasks and roles successfully. Hence, effective teaching strategies can significantly enhance entrepreneurial self-efficacy among students through promoting mastery experiences, vicarious learning, social persuasion, and emotional arousal (Althaus et al., 2026; Caliendo et al., 2023; Li et al., 2020). These strategies also enhance comprehension and retention by actively engaging students in the learning process, encouraging critical thinking, and reinforcing practical skills (Liu et al., 2022; Saoula, 2023). These approaches can promote

interactivity, enabling students to apply theoretical concepts in real-world contexts, thus nurturing entrepreneurial thinking, innovation, and confidence in their entrepreneurial abilities, and encouraging them to explore materials outside the classroom and take ownership of their learning. These strategies cultivate responsibility and accountability, essential attributes for entrepreneurial self-efficacy. When students actively participate in lessons, their curiosity is stimulated, and they become more invested in the learning process (Junaidi et al., 2023). This engagement is particularly important because it increases entrepreneurial self-efficacy by encouraging creativity, resilience, and adaptability. Based on the above, the following hypotheses are posited:

H1 Teaching Strategies positively and significantly affect students' entrepreneurial self-efficacy.

H2 Teaching Strategies positively and significantly affect students' entrepreneurial orientation.

Entrepreneurial Motivation Affects Students' Entrepreneurial Self-Efficacy and Orientation

Motivation and engagement are pivotal outcomes of effective teaching strategies. Interactive techniques, including gamification and collaborative learning, make lessons engaging and stimulate students' interest (Wardana et al., 2024; Yeh et al., 2021). It supports entrepreneurial personal values by encouraging creativity, resilience, and ethical decision-making (Srimulyani & Hermanto, 2022; Taneja et al., 2023; Yang et al., 2020). Educational applications and gamified tools make learning interactive and enjoyable, appealing to tech-savvy students and promoting business development. By teaching diverse strategies, educators can address individual needs, inspire curiosity, and prepare students for future challenges. Effective teaching strategies enhance academic outcomes and nurture personal values of entrepreneurship, equipping students to innovate, act ethically, and adapt in an ever-evolving world. Motivation acts as a driving force that encourages students to pursue entrepreneurial goals, develop relevant skills, and persist through challenges.

According to social learning cognitive theory, entrepreneurial self-efficacy is shaped through mastery experiences, vicarious learning, social persuasion, and emotional arousal, all of which are closely linked to entrepreneurial motivation (Abd Rahim et al., 2022). Entrepreneurial motivation fosters goal-oriented behavior and resilience, both of which are essential for enhancing entrepreneurial self-efficacy. When students are motivated to pursue entrepreneurial activities, they are more likely to engage in experiences that enhance their sense of competence and motivation as entrepreneurs, which in turn contributes to their overall entrepreneurial self-efficacy and prepares them for future challenges in the entrepreneurial landscape. Based on the above, the following hypotheses are posited:

H3 Entrepreneurial motivation positively affects students' entrepreneurial self-efficacy.

H4 Entrepreneurial motivation positively affects students' entrepreneurial orientation.

Students' Entrepreneurial Self-efficacy and Entrepreneurial Orientation

Entrepreneurial self-efficacy (ESE) is an individual's belief in their ability to perform entrepreneurial tasks successfully. This self-belief is important because it influences students' entrepreneurial orientation, which encompasses their willingness to engage in entrepreneurial activities and pursue innovative ventures. Some studies indicate that higher levels of ESE positively influence students' entrepreneurial intentions and behaviors (Otahe, 2022; Patel & Oghazi, 2024). These findings imply that students' capabilities are a catalyst for their initiative, risk-taking, and persistence in the face of challenges. ESE also fosters a proactive mindset, encouraging students to seek opportunities and develop innovative solutions (Adeel et al., 2023;

Cavin et al., 2020). Thus, ESE is linked to enhanced creativity and problem-solving skills, essential traits for successful entrepreneurs. Students with strong self-efficacy are more inclined to engage in entrepreneurial education and training, further reinforcing their skills and knowledge. Hence, entrepreneurial self-efficacy is a foundational element that empowers students to pursue their entrepreneurial aspirations, which educational institutions also foster. Based on the above, the following hypothesis is posited:

H5 Entrepreneurial self-efficacy positively affects students' entrepreneurial orientation.

Self-Efficacy Mediates Teaching Strategy and Entrepreneurial Orientation

Teaching strategies play a critical role in shaping students' academic performance, engagement, and personal development. Good teaching methods affect how well students understand ideas, remember what they've learned, and use what they've learned in real life. The impact of teaching strategies extends beyond academics, fostering critical thinking, collaboration, entrepreneurial orientation, and lifelong learning habits (Caliendo et al., 2023; Hassan et al., 2021; Neneh, 2020). The teaching strategies enhance comprehension and retention by actively engaging students in the learning process. Motivation and engagement are pivotal outcomes of effective teaching strategies. Interactive techniques, such as gamification and collaborative learning, make lessons more engaging and stimulate students' interest. Curiosity is stimulated for students to actively participate in lessons and the learning process. This engagement is particularly vital to developing an entrepreneurial orientation through encouraging creativity, resilience, and adaptability (Patel & Oghazi, 2024; Romero-Sánchez et al., 2024). These skills are invaluable for entrepreneurs, equipping students to identify opportunities, develop strategies, and overcome challenges (Cavin et al., 2020; Qi et al., 2024; Taneja et al., 2023). Techniques such as group projects and peer teaching promote teamwork and effective communication. These social competencies are critical for entrepreneurial success, enabling students to build networks, negotiate, and work effectively in teams. Effective teaching strategies further address diverse learning needs, ensuring inclusivity. Differentiated instruction adapts teaching methods to accommodate individual abilities and learning styles. Based on the above, the following hypothesis is posited:

H6 Self-efficacy has a positive role in mediating the relationship between teaching strategy and students' entrepreneurial orientation.

Self-Efficacy Mediates Students' Entrepreneurial Motivation and Entrepreneurial Orientation

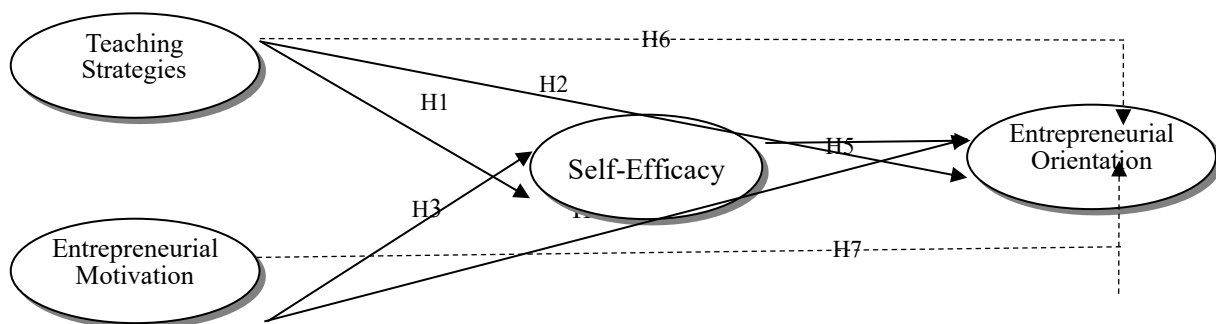
Entrepreneurial motivation plays a pivotal role in influencing students' entrepreneurial self-efficacy (Wardana et al., 2024; Yeh et al., 2021; Zhou et al., 2024). Motivation serves as a catalyst that propels students to pursue entrepreneurial objectives, cultivate pertinent skills, and endure obstacles. Entrepreneurial motivation also fosters goal-directed behavior and resilience, which are essential for building entrepreneurial self-efficacy. Vicarious learning, an element of social cognitive theory, links entrepreneurial motivation to self-efficacy (Taneja et al., 2023; Wang et al., 2023). Motivated students actively observe and learn from successful entrepreneurs or peers who model effective behaviors and strategies. These observations provide students with a reference point, demonstrating that success is attainable and motivating them to emulate similar actions. Role models inspire students to envision themselves as entrepreneurs, further enhancing their belief in their capabilities. Encouragement and positive reinforcement from educators, mentors, and peers play a crucial role in building students' confidence. When motivated students receive constructive feedback and validation for their efforts, they are more likely to believe in their potential and continue pursuing entrepreneurial goals. This social

support system enhances self-efficacy and fosters a collaborative environment where students can exchange ideas and seek guidance.

Motivated students often experience positive emotions that energize their efforts and sustain their focus. These emotions help them view challenges as opportunities rather than threats, fostering a proactive mindset. Positive emotional states also promote resilience, enabling students to recover from setbacks and maintain confidence in their abilities (Snowden et al., 2024). Also, the drive to be an entrepreneur pushes students to learn important skills such as problem-solving, critical thinking, and decision-making, which are closely related to self-efficacy. Motivated students are more likely to take initiative, experiment with ideas, and seek innovative solutions, thereby expanding their skill set and reinforcing their belief in their competence (Junaidi et al., 2023; Wang et al., 2023). These emotions help them view challenges as opportunities rather than threats, fostering a proactive mindset. Positive emotional states also promote resilience, enabling students to recover from setbacks and maintain confidence in their abilities. These experiences contribute to building a strong foundation for entrepreneurial success (Yang et al., 2020). Entrepreneurial orientation, characterized by innovativeness, proactivity, and risk-taking, aligns closely with self-efficacy. Motivated students are more likely to embrace innovation and take calculated risks, thereby reinforcing their confidence in entrepreneurial pursuits. This orientation drives students to seize opportunities, remain adaptable, and persist in the face of uncertainty, ultimately strengthening their entrepreneurial self-efficacy. Based on the above, the following hypothesis is posited:

Figure 1

Proposed Research Model



H7 Self-efficacy has a positive role in mediating the relationship between entrepreneurial motivation and students' entrepreneurial orientation.

Figure 1 shows the research model proposed.

Methodology

Participants

Southwest China is characterized by a unique economic landscape, with a significant portion of its population engaged in agriculture and traditional industries. This study addresses the need for skilled labor in these sectors, which are crucial to the region's economic development and modernization, particularly for vocational students. The vocational education system in Southwest China has been expanding recently, with increased government support and investment. This data makes vocational students a relevant population for studying the effectiveness of entrepreneurial education, as they are often at the forefront of skill development initiatives aimed at enhancing employability and entrepreneurial capabilities. This study used purposive sampling, selecting participants who were vocational students in Southwest China (e.g., Guizhou, Sichuan, Chongqing, Yunnan, and Xizang) who had completed an

entrepreneurship course. Inclusion criteria included: 1) being over 18 years old and 2) being a currently active student in a vocational school.

Instrument

The instrument comprised a section collecting demographic data, including gender and locale, and four scales. Items for teaching strategies were adopted from Balan and Metcalfe (2012). Students' entrepreneurial motivation was adopted from Staniewski and Awruk (2019). Students' self-efficacy comprised attitude and behavioral dimensions adopted from Mozahem and Adlouni (2021). Finally, the student's entrepreneurial orientation scale was adapted from Cavin et al. (2020). All items were measured on a Likert-type scale, with categories ranging from 7 = Strongly Agree, 6 = Agree, 5 = Somewhat agree, 4 = Neutral, 3 = Somewhat Disagree, 2 = Disagree and 1 = Strongly Disagree.

Pilot Study

Before the questionnaires were used to collect data, two experts in education and business validated the wording and translation of the questionnaires from English into Chinese. Following this step, a pilot test was conducted with 100 participants, and necessary changes were made. It was acceptable for further statistical analyses and formal study (Podsakoff et al., 2003).

Data Collection

Before data collection, permission was obtained from the relevant university offices. Once that was given, potential participants first sent an informed consent form via WeChat or email. Before participating, they were informed that participation was voluntary and that their responses would be used only in aggregate. After consenting, they were sent a survey link. Data collection lasted from May 1 to June 30, 2024. A total of 1149 participants completed the questionnaires, of which 990 were valid, yielding an effective response rate of 86.1%.

Overall, the demographic profile indicates that the study successfully captured a diverse sample across gender and origin. Table 1 shows the demographic profile of the respondents by gender, with 52.7% male and 47.3% female. This balance reflects diverse perspectives across gender groups, enhancing the representativeness of the findings. Most of the participants were from Chongqing province (28.0%), followed by Sichuan (25.1%), Guizhou (24.3%), and Xizang (22.6%). This distribution suggests a broad age range of participants and captures insights from two districts.

Table 1
Respondent Demographics

Demographic Items	Frequency	Percentage (%)
Gender		
Male	521	52.7
Female	469	47.3
Origin		
Guizhou	241	24.3
Sichuan	248	25.1
Chongqing	277	28.0
Xizang	224	22.6

All participants provided informed consent prior to enrollment in the study. Written informed consent was obtained from all individuals included in the research. The study protocol was reviewed and approved by the Ethics Committee of Mahachulalongkornrajavidyalaya University on April 17, 2024, and number R 215 / 2024. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. All participants provided informed consent after explaining the study purpose and assuring confidentiality.

Validity and Reliability

Common Method Variance (CMV)

Common method variance (CMV) was used to mitigate potential bias arising from anonymous questionnaire distribution, and the measurement items were randomly ordered (Podsakoff et al., 2003). The explained variance for the first factor was 25.63%, and the factor loading for CLF was 0.678, accounting for 45.96% of the variance. The results showed that no significant problems were associated with CMV because the first factor is 31.25 below 50%. This study also suggested post-detection methods for the common latent factor (CLF) using Harman's single factor test 41.68%.

Table 2 shows that the correlations between the scales in this study were significant, allowing further analysis, including confirmatory factor analysis (CFA) and structural equation modelling (SEM) to assess causal relationships and test research hypotheses (Hair Jr. et al., 2019). The Pearson correlation coefficient was also used to assess the relationship between the predictor variables (teaching strategies and entrepreneurial motivation) and the criterion variable (entrepreneurial orientation).

Table 2

Correlation Matrix for Measurement Scales

Construct	Mean	SD	TS	EM	SE	EO
TS	5.48	0.89	0.867			
EM	5.39	0.83	0.531**	0.823		
SE	5.27	0.73	0.503**	0.625**	0.754	
EO	5.31	0.84	0.651**	0.631**	0.546**	0.815

Note. TS: Teaching strategies, EM: Entrepreneurial motivation, SE: Self-Efficacy, EO: Entrepreneurial orientation

SD: standard Deviation

Diagonal elements are the square roots of the AVE for each construct

Pearson correlations are shown below the diagonal

Significant at *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$

Measurement Model

The confirmatory factor analysis (CFA) results met the model fit requirements (Hair Jr et al., 2019): $\chi^2/df = 3.631$, TLI = 0.956, RMSEA = 0.046, GFI = 0.951. CFI = 0.952, and IFI = 0.951) showed that the data fit well with the model. The results in Table 3 showed that all items for all variables loaded significantly; therefore, no items were deleted. The values of Cronbach's alpha, composite reliability, and average variance extracted (AVE) are significantly

above the threshold, indicating that inter-item reliability exists within each variable in this study.

Table 3
Measurement Results

Constructs	MLE estimates factor loading	Composite reliability (CR)	Average of Cronbach's α variance extracted (AVE)	
Teaching Strategy		0.826	0.675	0.857
The course helped me understand entrepreneurial concepts better.	0.677			
The course helped me become more confident in applying entrepreneurial skills.	0.861			
The course encouraged me to collaborate and communicate with	0.759			
The teaching approaches helped me take initiative and work	0.785			
The teaching approaches are useful in understanding business strategies.	0.829			
The teaching approaches helped me to develop problem-solving and critical-thinking skills.	0.886			
The teaching approaches helped me achieve personal goals.	0.783			
The teaching approaches helped me handle entrepreneurial challenges.	0.822			
Students' Entrepreneurial		0.851	0.621	0.795
The teaching approaches have motivated me to build my own	0.738			
I feel excited to explore new business opportunities.	0.750			
I am willing to achieve my entrepreneurial goals.	0.787			
I believe in entrepreneurship as a tool to achieve financial independence.	0.813			
I actively seek opportunities for entrepreneurial.	0.818			
I can develop a business.	0.694			
I see entrepreneurship to make a positive impact on society.	0.795			
Students' Entrepreneurial Self-Efficacy		0.872	0.641	0.752
I believe I can develop a successful business plan	0.766			

Table 3*Continued*

I am confident in identifying business opportunities.	0.820			
I feel capable of managing financial resources effectively.	0.875			
I can handle business challenges.	0.752			
I believe I can lead and motivate a team effectively.	0.814			
I can develop strategies to market and promote my business.	0.882			
I am confident in negotiating deals and partnerships.	0.771			
I can evaluate risks and take necessary actions to manage them.	0.822			
Students' Entrepreneurial		0.788	0.651	0.847
I can take and create new business opportunities.	0.862			
I prefer to lead rather than follow in team activities.	0.856			
I actively seek innovative solutions to problems.	0.768			
I often explore new ideas to improve business strategies.	0.874			
I strive to stay ahead of competitors through creativity and innovation.	0.819			
I am adaptable and willing to adjust strategies based on market needs.	0.771			

Structural Result

This research provides empirical support for all of the hypotheses (see Table 4 and Figure 2). The positive relationship between teaching strategies and entrepreneurial self-efficacy value ($\gamma_{11} = 0.150$, $p < 0.01$) supports H1. The findings indicate that effective teaching methodologies significantly enhance students' confidence in their ability to execute entrepreneurial tasks. Specifically, strategies such as active learning, experiential education, and collaborative techniques are instrumental in cultivating students' entrepreneurial orientation towards teaching ($\gamma_{21} = 0.352$, $p < 0.05$), thereby supporting H2. Effective entrepreneurial motivation lays the groundwork for developing these essential competencies, as constructive feedback is critical for building self-efficacy ($\gamma_{12} = 0.423$, $p < 0.001$), thereby supporting H3. Additionally, teaching methods that use real-life examples, practice activities, and the creation of business plans help students gain hands-on experience, strengthening their confidence and ability to handle entrepreneurial challenges ($\gamma_{12} = 0.471$, $p < 0.001$), supporting H4. Moreover, peer interactions and mentorship within educational settings create opportunities for vicarious learning, further bolstering students' confidence. As a fundamental catalyst, entrepreneurial self-efficacy significantly influences students' entrepreneurial orientation towards university entrepreneurial courses ($\beta_{21} = 0.524$, $p < 0.001$), supporting H5.

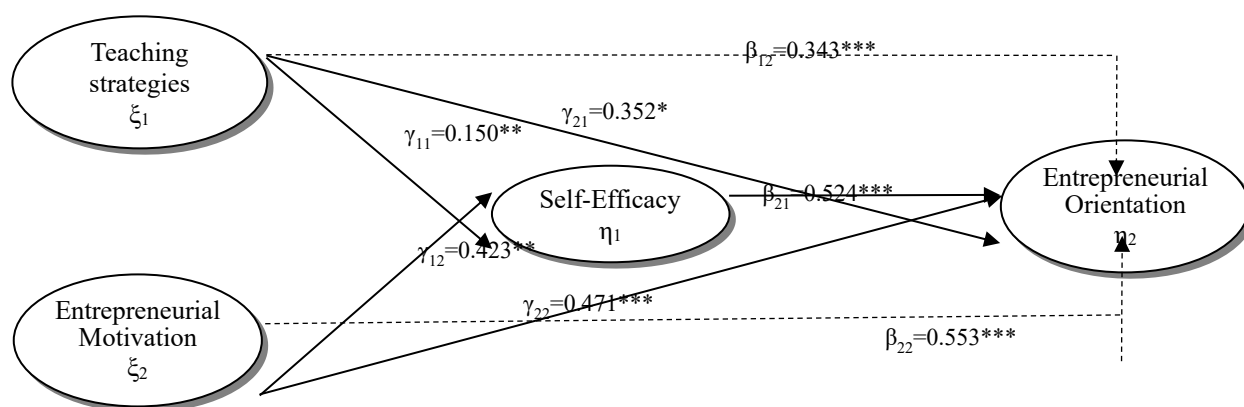
Table 4
Results of Hypothesis Testing for the Model Proposed

Hypothesis	Symbol	Path		Coefficients	Test results
H1	γ_{11}	Teaching strategies	→	Entrepreneurial Self-Efficacy	0.150** Supported
H2	γ_{21}	Teaching strategies	→	Entrepreneurial orientation	0.352* Supported
H3	γ_{12}	Entrepreneurial motivation	→	Entrepreneurial Self-Efficacy	0.423*** Supported
H4	γ_{22}	Entrepreneurial motivation	→	Entrepreneurial orientation	0.471*** Supported
H5	β_{21}	Entrepreneurial Self-Efficacy	→	Entrepreneurial orientation	0.524*** Supported
H6	β_{12}	Teaching strategies → Self-Efficacy → Entrepreneurial orientation			0.434*** Supported
H7	β_{22}	Entrepreneurial motivation → Self-Efficacy → Entrepreneurial orientation			0.553*** Supported

Note. Model fit: $\chi^2/df = 3.353$, GFI = 0.949, NFI = 0.953, CFI = 0.952, IFI = 0.952, and RMSEA= 0.056.

Significant at *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$

Figure 1
Structural Model Results



Discussion

These findings underscore the need to design curricula that prioritize active engagement, reflective learning, and experiential opportunities. Educational institutions can enhance entrepreneurial education by integrating simulation-based activities, interactive lectures, and real-world applications that align with entrepreneurial objectives. This aligns with previous studies that have established a positive and significant impact of entrepreneurial education on students' self-efficacy (Liu et al., 2022; Taneja et al., 2023; Wang et al., 2023). In contrast, the findings of Abd Rahim et al. (2022) and Adeel et al. (2023), which suggest a negative effect of the learning process on students' entrepreneurial self-efficacy, highlight the importance of critically evaluating and refining teaching strategies to ensure they effectively support student development in business. This comprehensive approach can help create a more conducive learning environment that fosters students' entrepreneurial spirit and capability.

Entrepreneurial motivation has been identified as a critical factor influencing students' entrepreneurial self-efficacy. It demonstrates that motivated individuals tend to exhibit greater

confidence in performing entrepreneurial tasks. Specifically, entrepreneurial motivation drives students to persist through challenges, thereby enhancing their belief and ability to succeed in entrepreneurial activities. This aligns with prior studies that highlight entrepreneurial motivation as a psychological force that initiates and sustains behavior, particularly in uncertain and dynamic entrepreneurial environments (Saoula et al., 2023; Srimulyani & Hermanto, 2021). Furthermore, Hoang et al. (2021) emphasize the role of students' entrepreneurial motivation, such as the desire for achievement, autonomy, and personal fulfillment, in developing self-efficacy. Motivated students are more likely to engage in entrepreneurial activities, including opportunity identification, business planning, and risk management. This engagement not only reinforces students' confidence but also enhances entrepreneurial self-efficacy. In contrast, Li et al. (2020) and Wardana et al. (2024) suggest that motivation alone may not significantly enhance self-efficacy unless it is coupled with external resources such as mentorship, funding, or access to training. This indicates that the relationship between entrepreneurial motivation and self-efficacy is contingent upon contextual factors, including institutional support and access to entrepreneurial ecosystems. The findings underscore the importance of cultivating entrepreneurial motivation to strengthen self-efficacy, as evidenced by an R^2 of 0.521, indicating that 52.1% of the variance in entrepreneurial self-efficacy is explained by the combined effects of teaching strategies and entrepreneurial motivation.

Entrepreneurial self-efficacy is a critical psychological construct that influences entrepreneurial orientation, as entrepreneurial tasks such as identifying opportunities, managing risks, and innovating have a significant positive effect on it. It demonstrates that higher levels of entrepreneurial self-efficacy positively impact entrepreneurial orientation. This orientation reflects an individual's or organization's strategic posture toward engaging in entrepreneurial activities, characterized by innovativeness, proactiveness, and risk-taking. Because students have the abilities and self-assurance needed to succeed in challenging business settings, students with high entrepreneurial self-efficacy are better prepared to embrace an entrepreneurial approach. Salehi (2026) and Yang et al. (2020) underscored that individuals with elevated self-efficacy are more likely to engage in behaviors aligned with entrepreneurial orientation. This suggests that self-efficacy fosters resilience, persistence, and goal-directed action, attributes essential for engaging in innovative and proactive entrepreneurial activities.

Osadolor et al. (2021) argued that entrepreneurial self-efficacy acts as a psychological driver of strategic behaviors, enabling individuals to take calculated risks and pursue opportunity-seeking activities. These behaviors are closely aligned with the core dimensions of entrepreneurial orientation, such as risk-taking, in which individuals with high self-efficacy are more willing to explore uncertain markets, and innovativeness, in which they actively seek novel solutions to challenges. The R^2 value of 0.583 indicates that 58.3% of the variance in entrepreneurial orientation is explained by the combined effects of teaching strategies, entrepreneurial motivation, and entrepreneurial self-efficacy. This highlights the foundational role of teaching strategies in fostering active learning, critical thinking, and innovation. Pedagogical methods such as business simulations, mentorship programs, and case-based learning create environments conducive to the development of entrepreneurial skills. In this context, entrepreneurial self-efficacy and motivation exert a more direct influence on entrepreneurial orientation, particularly in areas such as opportunity-seeking, innovation, and persistence, which are central to successful entrepreneurial endeavors. This comprehensive understanding points out the need for educational frameworks that integrate these elements to cultivate a robust entrepreneurial mindset among students.

Mediation Effect

This study adopted a confidence-interval bootstrapping method with 5000 simulations to test the role of self-efficacy in mediating the relationship between teaching strategies and

entrepreneurial motivation in shaping students' entrepreneurial orientation. Table 5 shows that all percentile method CIs and bias-corrected CIs span zero, indicating that all mediation effects are significant.

Table 5
Mediation Result

Direct effect		β	t	95% CI
Teaching strategies	→ Entrepreneurial	0.352	5.211*	(0.243,
Entrepreneurial	→ Entrepreneurial	0.344	11.471***	(0.183,
Indirect effect		β	SE	95% CI
Teaching strategies	→ Entrepreneurial self- efficacy →	Entrepreneurial	0.343 0.030	(0.272, 0.328)
Entrepreneurial	→ Entrepreneurial self- motivation efficacy →	Entrepreneurial	0.553 0.031	(0.385, 0.437)

Note. Significant at *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$

The role of self-efficacy as a mediator between teaching strategies and entrepreneurial orientation is supported; hence, H6 and H7 are supported (see Table 6). This finding demonstrates that teaching strategies significantly influence entrepreneurial orientation by shaping students' self-efficacy in entrepreneurial tasks. Effective teaching methods, such as active learning, business simulations, and real-world case studies, provide students with hands-on experiences that build their confidence in managing entrepreneurial challenges. The teaching strategies enhance students' propensity to exhibit key dimensions of entrepreneurial orientation, including self-efficacy, innovativeness, proactiveness, and risk-taking. Bahaw et al. (2024), Hoang et al. (2021), and Yeh et al. (2021) also emphasize that teaching strategies serve as catalysts for entrepreneurial learning by promoting critical thinking and problem-solving skills, which are essential for developing an entrepreneurial orientation in students.

Self-efficacy plays a crucial role in mediating the relationship between entrepreneurial motivation and entrepreneurial orientation (0.553, $p < 0.001$), thereby supporting H5. Entrepreneurial motivation acts as a driving force behind individuals' persistence, while self-efficacy synergistically fosters entrepreneurial orientations characterized by innovativeness, proactiveness, and risk-taking. Highly motivated individuals, driven by intrinsic goals such as achievement and autonomy, are more likely to seek opportunities and persist through challenges, especially when they possess strong self-efficacy (Boyaci & Erdamar, 2023; Caliendo et al., 2023; Taneja et al., 2023). In the business and education contexts, motivation triggers action, while self-efficacy sustains perseverance and strategic behaviors in the face of uncertainty (Neneh, 2020; Osadolor et al., 2021; Wardana et al., 2024). For instance, motivated individuals with high self-efficacy are more likely to proactively innovate and assess market opportunities, which are key attributes of entrepreneurial orientation (Hamilton et al., 2021). This interplay among motivation, self-efficacy, and teaching strategies underscores the importance of creating educational environments that nurture both intrinsic motivation and self-efficacy to cultivate a robust entrepreneurial mindset among students.

Conclusion

Entrepreneurial orientation, characterized by innovativeness, proactiveness, and risk-taking, is crucial for entrepreneurial success, especially in dynamic settings. Effective teaching strategies, entrepreneurial motivation, and self-efficacy influence this student's entrepreneurial orientation. Students' entrepreneurial motivation and self-efficacy significantly enhance the

impact of teaching strategies, which provide practical and experiential learning. Among these factors, self-efficacy stands out as the key predictor, equipping students with the confidence and ability to translate entrepreneurial knowledge into proactive, innovative actions in competitive environments. Teaching strategies, entrepreneurial motivation, and entrepreneurial self-efficacy significantly contribute to the development of entrepreneurial orientation. Furthermore, teaching strategies are essential for developing entrepreneurial orientation because they provide students with opportunities to learn practical skills and apply entrepreneurial ideas through hands-on activities, real-life examples, and business simulations. Entrepreneurial self-efficacy emerges as the most influential predictor of entrepreneurial orientation, bridging the gap between theoretical knowledge and practical entrepreneurial behavior.

Theoretical Contributions

This study serves as a source for extending and applying social learning theory within the context of entrepreneurial education. The study illustrates how specific teaching strategies, such as experiential learning, mentorship, and case-based instruction, serve as vital mechanisms for facilitating this process of observational learning. These strategies enable students to model entrepreneurial behaviors, including innovativeness, proactiveness, and risk-taking, by engaging with role models and industry experts. This contribution enriches social learning theory by demonstrating how structured educational environments can effectively promote observational learning tailored to entrepreneurial development. It also proves a dynamic interplay between teaching strategies and motivational factors in enhancing self-efficacy. This study also provides empirical evidence that these elements significantly bolster entrepreneurial self-efficacy towards operationalizing key constructs such as mastery experiences, verbal persuasion, and social modeling through educational interventions. Moreover, integrating entrepreneurial motivation as a cognitive driver underscores its role in amplifying the effects of self-efficacy on entrepreneurial behavior. This nuanced understanding not only deepens theoretical insights but also offers practical implications for designing educational programs that foster entrepreneurial skills and mindsets, ultimately contributing to the broader course of business.

Practical Contributions

This study highlights the practical significance of integrating teaching strategies, entrepreneurial motivation, and self-efficacy to foster entrepreneurial orientation. By offering practical recommendations for governments and universities, it drives home the importance of supportive entrepreneurial ecosystems. Governments can play a crucial role by funding startup incubators, offering grants, and incentivizing collaborations between academia and industry. Such initiatives not only promote financial literacy, especially among underrepresented groups, but also ensure equitable participation in entrepreneurial activities. Universities, on the other hand, must redesign curricula to include experiential learning opportunities like business simulations and internships, which equip students with hands-on experience. Establishing campus-based startup accelerators and mentorship programs can effectively bridge the gap between theoretical knowledge and practical application.

Additionally, enhancing students' self-efficacy through workshops and real-world projects fosters confidence and critical thinking skills. The integrated approach advocated in this study ensures the development of entrepreneurial talent, which is vital for economic growth, job creation, and societal progress. By prioritizing interdisciplinary collaboration, both governments and universities can cultivate a new generation of entrepreneurs to address innovation and progress. Ultimately, this comprehensive approach to entrepreneurial education

is essential for preparing future leaders to thrive in dynamic environments and thereby contribute to broader economic and social development.

Limitations and Future Study Directions

The study presents valuable insights into the predictors of entrepreneurial orientation; however, several limitations warrant critical reflection. The specific demographic and cultural characteristics of the sample may restrict the generalizability of the findings, as entrepreneurial behaviors are influenced by regional and contextual factors. Future research should prioritize cross-cultural studies that examine how cultural and institutional differences shape entrepreneurial motivation and self-efficacy to obtain more comprehensive insights. Furthermore, while the study identifies teaching strategies, motivation, and self-efficacy as key predictors, it overlooks other significant factors such as social capital, access to financial resources, and market dynamics. Future investigations should incorporate these elements, along with peer networks, industry collaboration, and financial literacy, to provide a more comprehensive understanding of entrepreneurial orientation. The reliance on self-reported data raises concerns about response bias, suggesting the need for methodologies that minimize this risk. Longitudinal studies could enhance understanding by examining the causal relationships between teaching strategies and entrepreneurial outcomes over time. Furthermore, exploring the moderating and mediating effects of mentorship, digital tools, and government policies could yield deeper insights into the mechanisms influencing entrepreneurial success. Employing qualitative or mixed-method approaches may also enrich the findings and provide a more nuanced perspective on the entrepreneurial landscape.

Author Contributions

Xia Wu: Conceptualization, writing-original draft preparation, resources and methodology; Nur Fauziyah: validation, writing-review and editing; and formal analysis, and investigation; Junaidi Junaidi: Method, Software, project administration. All authors have read and agreed to the published version of the manuscript

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Ethics Statement

All participants provided written and oral informed consent before enrolment in the study. Consent from participants was obtained before data collection to complete the online questionnaires for transcribing and analyzing the data. All research procedures and steps taken by the authors complied with the 1964 Declaration of Helsinki and its later addenda.

Data Availability Statement

The research data supporting this study are available from the corresponding author upon reasonable request. Due to privacy and ethical considerations, the raw survey data containing participant responses cannot be publicly shared.

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Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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