

Exploring OBE-Based Teaching Methods in Innovation and Entrepreneurship to Enhance Student Engagement

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Abstract

Universities shoulder the responsibility of nurturing high-quality talent, and integrating innovation and entrepreneurship education into course instruction is essential for cultivating individuals who can meet current societal needs. As a core element in developing applied talent, innovation and entrepreneurship education significantly contributes to enhancing the quality of applied talent training and promoting application-oriented development in higher education institutions. This study explores the enhancement of student engagement in innovation and entrepreneurship courses within the framework of Outcome-Based Education (OBE) through a variety of student-centered teaching methods. Teaching design incorporates group discussions, debates, role-playing, quizzes, ERP simulation, interactive games, and practical base activities, evaluated through a combination of quantitative and qualitative methods. Results indicate that these methods can significantly stimulate student engagement, enhance innovative thinking, and improve practical skills, providing a valuable reference for future improvements in teaching models for innovation and entrepreneurship education.

Keywords

OBE; Innovation and Entrepreneurship; Teaching Research.

1. Introduction

Amid the era of comprehensive reforms and development focused on quality and substance, building a high-level, high-quality, and distinctive application-oriented university has become the new direction for the accelerated development of educational institutions. Cultivating high-quality, application-oriented talents with an innovative mindset is a pressing objective that higher education must tackle in the coming years. As an essential tool for nurturing such talent, the quality of innovation and entrepreneurship courses directly impacts the caliber of application-oriented graduates.[1] Most of China's application-oriented universities were restructured or newly established since 2000, starting with limited resources and facing substantial developmental challenges in enhancing the quality of their innovation and entrepreneurship programs, often misaligned with the goals of these institutions.[2]

With the global shift in educational models, Outcome-Based Education (OBE) has become increasingly applied in university courses, particularly in innovation and entrepreneurship education. Traditional teaching methods, which tend to be teacher-centered, are often insufficient for effectively engaging students and fostering their innovative capabilities. This study aims to explore, through practical research, how innovation and entrepreneurship courses can better engage students under the OBE model. Innovation and entrepreneurship

education should emphasize the central role of students, fully engaging young learners and enhancing their motivation and self-discipline.

2. Background and Purpose

Changes in the Global Educational Environment: With rapid economic globalization and technological advancements, education faces new challenges. Modern education emphasizes not only knowledge transmission but also the cultivation of students' innovative and practical abilities. Education systems worldwide have undergone reforms to meet these evolving demands. For instance, Finland's emphasis on combining independent study with practical application has set an international standard in education.

The Importance of Innovation and Entrepreneurship Education: In the knowledge economy era, innovation and entrepreneurship are vital drivers of economic growth and social progress. As a critical base for talent development, universities must prioritize innovation and entrepreneurship education, enhancing students' practical skills and innovative thinking. In 2019, a Chinese university established an "Innovation and Entrepreneurship Practice Center," successfully incubating several student-led projects that strengthened students' hands-on abilities and market awareness.

3. The Application of OBE in Innovation and Entrepreneurship Education

The core philosophy of OBE is outcome-focused learning, centering course design on student knowledge acquisition and skill development. In this study, we define the learning outcomes of innovation and entrepreneurship courses, establish relevant assessment standards, and enhance the practical relevance of the educational process. Originating in the United States in the 1970s, OBE aims to improve education quality through well-defined learning outcomes, rooted in constructivist learning theory, which emphasizes student engagement and practical application. Courses in innovation and entrepreneurship should be designed to ensure that every aspect of the curriculum contributes to achieving these predefined learning outcomes.

OBE emphasizes outcome-focused learning, aligning closely with the goals of innovation and entrepreneurship education. This approach entails defining specific post-course achievements in terms of knowledge mastery, skill application, and critical thinking development. Diversified teaching methods are explored in this study to assess their impact on student engagement and learning outcomes. OBE drives the diversification of teaching activities, promoting student engagement and agency through practice and interaction, allowing students to apply knowledge in real-world contexts. Research on OBE applications in higher education shows increased student interest and academic performance, notably in fields such as engineering, medicine, and education. Zhongxu Wang(2024) suggests that project-based teaching, competition-driven instruction, school-enterprise cooperation, and research-driven feedback effectively integrate innovation and entrepreneurship education with professional course education, achieving significant talent development outcomes. [3]Xihong Qian(2024) emphasizes that instructors should encourage students to select group projects focused on innovation and entrepreneurship within management research methods courses, enhancing students' sensitivity to entrepreneurship.[4] They suggest using research methods and data processing learned in these courses to evaluate entrepreneurial markets, perform risk analysis using statistical tools, simulate risk scenarios, and make decisions using decision trees.

4. Teaching Model Design

Under OBE principles, this study designs various student-centered activities for an innovation and entrepreneurship course based on the curriculum compiled by Guangzhou Institute of Business and Technology. Specific activities include:

Table 1. Matching Different Topics and Teaching Methods

Chapter Number	Chapter Theme	OBE Teaching Design
Chapter 1	Innovation and Innovative Thinking	Knowledge Competition (One Stand Until)
Chapter 2	Building Entrepreneurial Teams	Role-playing + Complimenting Someone Around You
Chapter 3	Entrepreneurial Awareness and Opportunity Recognition	Debate Competition
Chapter 4	Entrepreneurial Risks	Role Play (You Be the Teacher)
Chapter 5	Lean Startup Method	Interactive Game (Who is the Undercover)
Chapter 6	Business Models and Business Plans	Brainstorming
Chapter 7	Entrepreneurial Competitions and Guidance	Business Roadshow PK
Chapter 8	Entrepreneurial Implementation	ERP Practical Simulation

4.1. Innovation and Creative Thinking: Knowledge Competition (e.g., "One Stand Until")

"One Stand Until" is adapted from the American NBC show "Who's Still Standing." It is an innovative and entertaining quiz competition that explores personalities through challenges and is filled with suspense. The format features participants engaging in individual head-to-head quiz battles, allowing individuals from various professions and social backgrounds to compete in knowledge challenges within a limited time frame. Questions are designed around types of thinking (e.g., convergent & divergent thinking, lateral & vertical thinking). Students participate in designing question cards and forming a question bank. Through the Learning Pass platform, students are selected randomly for head-to-head knowledge competitions. These competitions foster engagement and understanding, stimulating students' interest and classroom energy.

4.2. Team Building: Role-playing + Complimenting Someone Around You

Based on the roles involved in "Team Formation for Entrepreneurship," a group leader is elected, who acts as the company owner. The leader then selects role cards for positions such as "Chief Financial Officer," "Human Resources Director," "Sales Director," and "Operations Director," to form the team. (Note: there cannot be two individuals with the same role card in one company.) Other students, based on the member role cards they receive, can compete for roles in different companies. Eventually, a new company is formed, and a representative is chosen to present on stage, explaining the company name, planned projects, and reasons for formation. The newly formed group solidifies its structure in the "Group Tasks" section of the learning platform, with subsequent thematic activities centered around group activities.

After completing the group tasks, all team members take the stage. Each member, from left to right, praises the others according to the roles involved in the entrepreneurship team (as shown in the table below: Innovator, Connector, Coordinator, Perfectionist, Monitor, Cohesion Builder, Promoter, Finisher, Expert), highlighting their strengths and characteristics suited for those roles. Through role-playing in the company, participants gain a deeper understanding of the grouping within entrepreneurship teams and experience future company roles. The

"Complimenting Someone Around You" activity quickly achieves team integration for the "Entrepreneurship Team," realizing the effect of "integrating learning with practice."

Table 2. Description of Entrepreneurial Team Roles

Role	Corresponding Company Role	Role Description
Innovator	R&D Department	Problem solver, creative, imaginative, breaks conventions.
Connector	Sales Department	Outgoing, enthusiastic, talkative, seeks opportunities, enhances connections, public support.
Coordinator	General Office	Mature, confident, recognized, supports goals, promotes cooperation.
Perfectionist	Finance Department	Energetic, not afraid of pressure, seeks results, somewhat idealistic.
Monitor	Discipline Inspection	Calm, strategic vision, perceptive, rational in choices and judgments.
Cohesion Builder	Leadership Team	Sensitive, composed, good listener, often at the core of the team.
Promoter	Operations Management	Highly disciplined, good at turning ideas into actions, strong execution.
Finisher	Regular Employees	Diligent, responsible, actively engaged, completes tasks.
Expert	Various Department Experts	Focused on goals, provides specialized knowledge and experience, somewhat irreplaceable.

4.3. Entrepreneurial Perception and Opportunity Identification: Debate

The debate competition, also known as a debate contest or debate meeting, is a competitive activity in which two opposing teams engage in a debate on a specific issue. In essence, it is a contest that revolves around the topic of the debate, testing related knowledge, critical thinking skills, language expression abilities, and overall competency. Following each lecture module, teams engage in structured debates, allowing each student to participate and contribute. After the debate, reflections are encouraged to appreciate diverse perspectives. Customized debate topics based on lecture content help enhance critical thinking and deepen understanding of entrepreneurship.



Figure 1. Photo of the Debate Competition

4.4. Entrepreneurial Risks: Role Reversal (Student-Teacher Role)

Students take on the role of the “teacher,” presenting different aspects of entrepreneurial risk. Group leaders provide feedback, and the instructor offers additional insights. Voting on the best presentations rewards groups with additional points, increasing engagement and enhancing students’ comprehension of course material.



Figure 2. Photo of “Student-Teacher Role”

4.5. Lean Startup Methodology: Interactive Game (“Who is the Undercover”)

“Who is the Undercover” is a game that has evolved from the ghost-catching game, where players compete in language expression, knowledge, and imagination. Participants are divided into three roles: the undercover agent, civilians, and blank cards. Each player describes the word they have received in one sentence, aiming to neither let the undercover agent recognize it nor give away hints to their teammates. After everyone has described their words, players vote to identify the suspected undercover agent; the person with the most votes is eliminated. When all players from one side are eliminated, the other side wins. Through modules like “Minimum Viable Product (MVP)” and “User Feedback,” students play “Undercover,” where hidden roles encourage strategic thinking and teamwork. This game-based approach serves as a quick review and reinforces OBE principles through an engaging format.

4.6. Business Model and Business Plan: Brain-storming

Brainstorming originally comes from the field of psychopathology, referring to the state of mental confusion in psychiatric patients. It has since evolved into a method of unrestricted free association and discussion, aimed at generating new ideas or inspiring innovative concepts. The brainstorming technique, also known as the “intellectual stimulus method,” “BS method,” or “free thinking method,” was first proposed by American creativity theorist A.F. Osborn in 1939 and officially published in 1953. This method has been practiced and developed by creativity researchers worldwide, leading to the formation of various inventive techniques, such as Osborn's intellectual stimulus method, the written intellectual stimulus method, and the card-based intellectual stimulus method. Through “business models and business plans,” students identify “business ideas” via group discussions and collaboratively write the executive summary, project introduction, products and services, industry and market analysis, marketing plan, production operations, company management, financial plan, risk control, and capital exit strategy of the business plan in a segmented and step-by-step manner. The teacher serves as a

facilitator during discussions to ensure depth and breadth. Through group collaboration, students can learn from one another, spark creativity, and cultivate a spirit of teamwork.

4.7. Entrepreneurship Competitions and Mentorship: Roadshow

A roadshow is a promotional method for securities issuance that has been widely adopted internationally. It refers to a presentation activity where securities issuers, with the assistance of investment bankers or underwriters, promote their offerings to institutional investors before issuing securities in the primary market. This process facilitates successful stock issuance through thorough communication between both investors and issuers, ensuring smooth stock issuance while helping to enhance the potential value of the stock. Based on their business plans, each team delivers a pitch. Group leaders rate presentations, and students play the role of “angel investors,” each having a “fund” to allocate. This role-play promotes a competitive yet collaborative environment, enhancing students’ understanding of entrepreneurial evaluation.



Figure 3. Photo of the Live Broadcast Studio

4.8. Startup Implementation: ERP Simulation

Students participate in ERP simulation, where each team role-plays as a virtual enterprise. Through market predictions and strategy formulation, students manage a simulated company, learning complex business decision-making. The team with the highest “owner’s equity” (profit) wins.

5. Conclusion and Prospects

Education embodies the hopes and aspirations of the younger generation for a better future. The practice of innovation and entrepreneurship education in higher education must directly confront challenges and issues, helping more young students better adapt to the new demands and expectations for high-quality talent in economic and social development. This study shows that the OBE-based approach in innovation and entrepreneurship education effectively increases student engagement. Future research can further optimize OBE methods and explore

additional innovative tools to enhance students' employability and skills. By integrating OBE with other tools, future research may further improve students' overall competencies across disciplines. Comparative studies between disciplines may help identify specific teaching strategies tailored to the unique challenges faced in different fields.

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