

Studying on and Applying the Principles of Entrepreneurship Education Within the Framework of Outcome-Based Education (OBE)

Tong Tong

Sichuan Minzu College, Department of literature, Sichuan, Kangding, 626000, China.

Abstract

This research examines the teaching reform of innovation and entrepreneurship education courses, utilizing the basic entrepreneurship course as a case study, within the framework of the Outcome-Based Education (OBE) paradigm. Classroom teaching is structured around teaching objectives, teaching plans, teaching assessment methods, and teacher teaching content. It primarily focuses on designing teaching objectives through reverse thinking and ability-based approaches. It also incorporates a blended teaching approach that combines online and offline methods, as well as large and small class formats. Additionally, a "process & outcome" assessment method is used, which involves conducting a questionnaire survey to evaluate teaching effectiveness and gather students' feedback. This feedback is then used to make improvements and adjustments to the teaching process. Empirical evidence has demonstrated that reforming the teaching of the fundamental entrepreneurship course is beneficial for enhancing teachers' educational and instructional capabilities, as well as fostering students' capacity for innovative thinking and entrepreneurship.

Keywords

OBE concept; Innovation and entrepreneurship education; Entrepreneurship Fundamentals Course.

1. Innovation and entrepreneurship education in universities

Implementing innovation and entrepreneurship education in universities, actively fostering college students' understanding of autonomous entrepreneurship, innovative mindset, and practical skills, is beneficial for constructing an innovative nation and advancing employment through entrepreneurship[1]. In May 2015, the General Office of the State Council released the Implementation Opinions on Deepening the Reform of Innovation and Entrepreneurship Education in Higher Education Institutions. The document suggests that universities should enhance the reform of innovation and entrepreneurship education by adopting advanced educational concepts, targeting all students, implementing specialized teaching methods, integrating different academic disciplines, emphasizing practical experience, promoting holistic student development, enhancing the quality of human capital, and fostering a new generation of entrepreneurs and innovators[2]. Furthermore, the document proposes the establishment and improvement of a university innovation and entrepreneurship education system that incorporates classroom instruction, self-directed learning, practical application, guidance and support, and cultural guidance by the year 2020. The quality of talent cultivation has greatly advanced, leading to a major enhancement in students' innovative spirit, entrepreneurial consciousness, and innovative and entrepreneurial abilities. There has been a substantial rise in the number of students involved in entrepreneurial activities.

In the context of "double innovation" education, innovation and entrepreneurship education in China has made significant progress. Many institutions have introduced innovation and

entrepreneurship courses and integrated[3] them into their general education curriculum, yielding positive outcomes. Nevertheless, certain universities exhibit areas that require immediate enhancement in their implementation of innovation and entrepreneurship education. Specifically, these universities lack adequate practical teaching in innovation and entrepreneurship, as well as practical platforms[4]. Additionally, the concept of innovation and entrepreneurship education in some universities is outdated, and there is a lack of integration between innovation and entrepreneurship education and professional education, resulting in a disconnect from real-world application. The development of several innovation and entrepreneurship courses is currently in the preliminary phase, and there are deficiencies in the areas of concepts, culture, teaching methods, curriculum, faculty, funding, and collaboration in innovation and entrepreneurship education. The educational and teaching philosophy of certain teachers is antiquated and challenging to transition from the traditional teacher-centered and teacher-led roles[5]. Additionally, some teachers who enroll in innovation and entrepreneurship courses lack a background in innovation and entrepreneurship education, as well as the necessary professional and practical skills. The courses are instructed on a part-time basis by counselors and administrative professionals, and the instructional standard is subpar. Additionally, there is a lack of specific extracurricular learning opportunities for students, as well as limited platforms for fostering entrepreneurship and creativity. A minority of teachers engage in innovation and entrepreneurship education using only one teaching method, lacking both the skill and awareness to innovate[6]. Their teaching process is one-sided and lacks a targeted approach. Several instructors in the innovation and entrepreneurship course have a tendency to prioritize the instruction of theoretical information, often presenting numerous concepts and dull material. They frequently employ the conventional pedagogical approach of explaining concepts in a sequential manner. During the course of instruction, the focus is mostly on the content taught by the teacher and the methods of teaching, with little regard for the individual needs of students or their unique qualities. The teaching schedule and structure are rigid, and student performance is typically evaluated by tests or quizzes. While these courses may guarantee the effective execution of the teaching plan, they do not foster students' enthusiasm for learning or nurture their creativity and entrepreneurial skills.

The concept of Outcome-based Education (OBE) was initially introduced by American academic Spady in 1981 and subsequently refined via practical implementation. The philosophy of OBE prioritizes student-centered learning, focusing on tangible outcomes and ongoing improvement[7,8]. It is dedicated to nurturing students' happiness, innovation, communication, teamwork, and professional skills. In 2013, China endorsed the Washington Agreement, signifying the widespread acceptance of the OBE concept within the higher engineering education community in China. Subsequently, the OBE idea is extensively utilized in various domains like professional engineering certification, vocational education, and general applied undergraduate education in China. [6] The pedagogical ideology of 62-67OBE primarily has three fundamental components: student-centricity, outcome-focused, and ongoing enhancement. One of the key focuses of the "Student Center" is to prioritize a shift in teaching methodology from emphasizing "what I taught" and "how to teach" to prioritizing "what students learned" and "what students are interested in". The teachers' dominion over the curriculum has diminished, and their instruction now prioritizes the students' learning interests and talents. The term "achievement oriented" is distinct from the conventional approach of evaluating learning outcomes based solely on scores. In the context of Outcome-Based Education (OBE), achievement refers to the significant results that students attain throughout their educational journey, encompassing more than just the acquisition of course content[9]. Learning results must be applied in everyday life. These outcomes should not only involve knowledge and understanding, but also be visible and measurable. The concept of "continuous improvement" is seen in the requirements of students regarding instructional

methods and assessments. Teachers can enhance their teaching methodologies by tailoring them to the individual needs, circumstances, and receptiveness of each student. They can also analyze the learners' requirements and employ more appropriate instructional techniques. Simultaneously, learners can progressively develop their own learning preferences and engage in self-assessment.

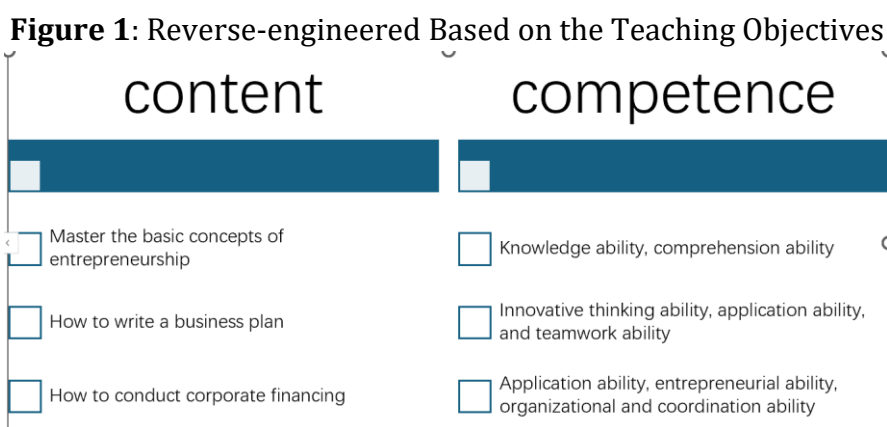
This teaching philosophy of OBE aligns with the principle of "entrepreneurship and entrepreneurship" education. It follows the principles of being people-oriented, problem-oriented, comprehensive in its approach, integrating professional aspects, emphasizing practical application, and utilizing innovative teaching methods. The main goal is to cultivate students' innovative spirit, entrepreneurial awareness, and ability in innovation and entrepreneurship[10]. The implementation of curriculum teaching based on the OBE concept necessitates a shift in traditional curriculum concepts. This shift entails not only focusing on knowledge transmission, but also giving greater consideration to students' learning interests, learning methods, learning outcomes, and learning abilities. It involves adopting a people-oriented curriculum concept, implementing a student-centered approach, and fostering equal and harmonious teacher-student relationships. Furthermore, it requires a departure from one-way transmission and the encouragement of active student participation in course teaching activities, thereby facilitating two-way interaction. Additionally, teachers must leverage modern technology, integrate course resources, and expand course time and space to enhance students' learning experience. To summarize, the instruction of OBE philosophy aims to foster students' curiosity, creative mindset, and inventive thinking in the fields of innovation and entrepreneurship, with the goal of nurturing versatile individuals.

The purpose of implementing innovation and entrepreneurship education in universities is twofold. Firstly, it aims to equip students with the necessary skills and knowledge to start their own businesses. Secondly, it seeks to foster an innovative mindset and capability among students, enabling them to possess a spirit of innovation, a deep understanding of innovative concepts, and the ability to adapt to societal changes and integrate into the professional world. Additionally, this education also aims to cultivate students' correct worldviews, perspectives on life, and values, thereby preparing them to become competent successors in a socialist society[11]. Based on the "Learning Pyramid Theory", students might attain higher learning outcomes by actively increasing their learning initiative through their interests and hobbies. This article examines the educational reform and practical challenges of the "Entrepreneurship Fundamentals" course, which is grounded in the Outcome-Based Education (OBE) philosophy. In the "Entrepreneurial Fundamentals" course, the author follows a student-centered, problem-oriented, and continuous improvement teaching philosophy. The course is designed in reverse, taking into account the specific needs of the students. A hybrid approach of online and offline teaching is adopted, allowing students to choose their study time and review the material multiple times based on their own learning pace. The teaching method combines large class sessions with small class sessions, which helps to reduce the overall teaching time and provides personalized guidance tailored to each student's needs. The assessment of students' learning effectiveness is done through a combination of process assessment and outcome assessment, which includes factors such as attendance, group discussions, classroom atmosphere, homework, and group projects. The teaching and assessment methods are continuously improved based on student performance, final assessment results, and feedback received. This aligns not only with the demands of the information age, but also with the educational objectives of "double innovation", thereby facilitating the attainment of curriculum teaching goals related to "gender" and "once".

The Entrepreneurship Basic Course is a mandatory general education course designed for undergraduate and junior college students. It focuses on theoretical, policy-oriented, scientific, and practical aspects of entrepreneurship[12]. The course's objective is to foster individuals

with innovative thinking skills and the ability to adapt to the changing needs of society, in accordance with the talent cultivation plan's requirements. The course consistently focuses on the criteria of "gender" and "degree". The Entrepreneurship Basic Course aims to achieve the following objectives: stimulating entrepreneurial awareness, cultivating innovative entrepreneurial thinking, and improving innovation and entrepreneurship ability. The primary goal of the course is to equip students with the fundamental knowledge, relevant tools, and skill set necessary for engaging in innovation and entrepreneurship activities. It also aims to help students understand the essential meaning of innovation and entrepreneurship, as well as the unique characteristics of entrepreneurial endeavors, and develop the ability to critically understand and analyze entrepreneurs. The course aims to provide students with opportunities for entrepreneurship, access to entrepreneurial resources, and involvement in entrepreneurial projects. The intermediate goal is to develop students' understanding of entrepreneurial thinking, foster their innovative and entrepreneurial mindset, encourage them to explore their own strengths and resources, enhance their teamwork and communication skills, and improve their overall quality and entrepreneurial and employment abilities. The advanced goal is to instill in students the seeds of innovation and entrepreneurship, establish a scientific understanding of innovation and entrepreneurship, and cultivate a correct worldview, outlook on life, and values, thereby nurturing well-rounded individuals. Additionally, it is expected that students will grasp the relationship between entrepreneurship and employment, adhere to the principles of entrepreneurship, and actively participate in entrepreneurial activities.

To attain the purpose of enhancing teaching ability, the teaching objectives of the teacher's curriculum must be in sync with the objectives for teaching ability. The teaching objectives should be reverse-engineered based on the teaching objectives, as indicated in Figure 1.



Teaching Plan Design: This course will utilize a varied teaching methodology, incorporating both "lecture-style classes and interactive small-group sessions" as well as a combination of online and offline learning. It follows the OBE teaching philosophy, prioritizes student needs, and concentrates on creating teaching plans based on "students' acquired knowledge", "students' learning interests", and "students' learning methods".

The Entrepreneurship Basic Course consists of a total of 32 hours of instruction. This course utilizes the textbook "Fundamentals of Innovation and Entrepreneurship for College Students" edited by Huang Haiyan. The textbook consists of eight chapters that cover theoretical knowledge. Teachers primarily facilitate the acquisition of theoretical knowledge by providing students with learning resources through the teaching platform (Learning Platform) at specific times and based on the content being taught. This enables students to engage in autonomous learning. Typically, teachers impart theoretical knowledge once a week, with a maximum

learning period of 2 class hours, and finish the distribution of theoretical knowledge over a span of 8 weeks. Once pupils have finished acquiring the necessary knowledge, the teacher will arrange and clarify the key and challenging concepts in person. The teacher can organize multiple classes of students to collaborate based on the teaching class's situation. These collaborative sessions occur every two weeks, lasting for 2 hours each time. The main purpose is to assist students in resolving key and challenging issues encountered during self-study, addressing difficulties, and reinforcing and organizing knowledge points.

The dual tutoring approach for teachers is primarily categorized into online and offline modalities. Teachers primarily engage in online communication with students, distribute learning tasks, and assign homework based on the pace of instruction. Additionally, they assess and provide feedback on students' completed assignments[13]. The offline tutoring section primarily utilizes small class instruction, focusing on three main teaching tasks: firstly, reviewing students' online homework submissions; secondly, facilitating case analysis and group discussions to reinforce key knowledge points; thirdly, guiding students in group-based social practice, which involves the development of an entrepreneurial plan. Teachers coordinate students to present and offer comments. Teachers offer supplementary support to students who express interest in engaging in innovation and entrepreneurship competitions or have produced commendable innovation and entrepreneurship ideas for their final assignments.

Traditional assessment approaches for teaching assessment design often involve quantifying grades, with regular grades accounting for 30% and final grades accounting for 70%[14]. Simultaneously, final grades mostly rely on assessments conducted through written examinations. This assessment method may result in certain students not approaching the exam with the necessary seriousness and mistakenly believing that they may attain satisfactory outcomes by engaging in last-minute studying. Evaluating students' complete talents, as well as their creativity and entrepreneurial skills and original thinking, is a challenge for teachers. The OBE concept primarily centers around output orientation, emphasizing what students may learn and achieve through the learning process. It promotes interactive learning that prioritizes the learning process itself. Assessment tools can enhance students' learning by determining if educational objectives have been met and evaluating their overall ability[15]. As a result, this course has also revised the evaluation techniques. Initially, the quantitative assessment ratio will be modified to 40% for regular grades and 60% for final grades. An strategy that combines process assessment and outcome evaluation will be used, with a focus on students' learning based on their process. Regular assessments typically consist of three components: attendance, in-class performance, and post-class grades. Among these factors, attendance serves the sole purpose of guaranteeing the smooth functioning of teaching operations, constituting a mere 5%. Classroom performance primarily encompasses students' engagement in course instruction, which includes adherence to classroom rules (for informational purposes only, not factored into course grading) and the level of interaction between students and teachers, such as their willingness to engage with teachers and actively participate in responding to teacher inquiries. Individual grades contribute to 10% of the overall grade, while group grades, which are based on case study discussions, contribute to 15%. Post-class marks primarily pertain to the acquisition of knowledge and the completion of online assignments assigned by teachers. These grades are predominantly determined by individual students and account for 10% of the overall grade. The final assessment is now administered using a different format than exam papers. It not only prioritizes students' proficiency in certain areas of knowledge, but also places importance on developing their skills, applying information, problem-solving abilities, teamwork skills, and resilience under duress.

The overall assessment for the "Entrepreneurial Fundamentals" course consists of two components. Firstly, students are expected to collaborate in groups to select project topics for

conducting social surveys[16]. Subsequently, they are required to develop an entrepreneurial strategy based on the findings of the social survey. Each group within the entrepreneurial plan must establish a clear delineation of responsibilities among its members. This is necessary for the teacher to assess and assign individual and team scores during the evaluation process. Additionally, upon completion of the entrepreneurial plan, the teacher will arrange for students to present their accomplishments in social practice through small class presentations. These presentations will cover key tasks, progress status, and the students' comprehension of entrepreneurship, among other aspects. This part will also compute individual and team points. The final report is determined by a combination of the individual score and the team score, with each component contributing 50%. The formula for calculating the final grade of the course is as follows: the total score is determined by adding the attendance score (5%), the score for classroom performance (which includes personal interaction, group discussion, and personal assignments) (10%), and the score for the final exam (which consists of an entrepreneurial plan and a report).

The teaching practice method of teachers appears to have reduced the amount of time teachers spend teaching, with a majority of students engaging in autonomous study. There is a widespread belief that the teaching responsibilities of educators have been diminished. Contrary to the initial statement, under the OBE teaching mode, teachers are required to transition from traditional authoritative figures to teaching assistants. They must take on the role of teaching managers and actively contribute to the revision of talent development plans and teaching outlines. Additionally, teachers are expected to become collaborative learners, engaging in joint learning experiences with students. They should closely monitor students' learning feedback, tailor teaching content to their individual characteristics, teach according to their abilities, and provide personalized guidance.

The entrepreneurship foundation course is a general education course that is offered to all students in the school. Teachers are required to create teaching outlines and lesson plans that cater to the specific needs of students in each major, align with the talent training programs, and consider the characteristics of the students. (2) In addition, teachers should prepare online teaching videos according to the course schedule. These videos can be recorded by the teachers themselves or obtained through other sources. Simultaneously, the teacher should monitor the video content, create assignments for this chapter, and release both the video and assignments within the designated timeframe. Additionally, students are expected to complete the video lessons and related tasks within the specified timeframe, and are encouraged to communicate any learning challenges they encounter. Teachers should utilize online platforms to offer prompt technical support. Additionally, teachers should coordinate offline small group instruction, primarily focusing on addressing students' questions and organizing video content from previous lessons based on their individual learning progress, homework completion, and areas of difficulty. Furthermore, students are arranged into groups to collaboratively discuss and exchange pertinent case studies that align with the subject matter covered in the preceding session. Additionally, individualized support is offered to students with specific requirements, such as those who have a keen interest in entrepreneurship and wish to participate in competitions. The final entrepreneurial proposals submitted by students are thoroughly reviewed, and offline presentations are organized accordingly. Lastly, teaching methods, videos, assignments, and other instructional materials are promptly adjusted based on the evolving needs and progress of the semester.

The author implemented this instructional technique in the education of 76 students over two classes. Analysis of the entrepreneurial plans presented by students at the end of the term revealed that the quality of the plans exceeded that of the prior class. The entrepreneurial strategies were innovative and captivating, resulting in a 3.6 % in the average student score on the final evaluation. The author devised a set of 10 questionnaire questions, mostly focusing on

teaching style, assessment mode, reverse discovery, and other related aspects. A confidential ballot was conducted using Questionnaire Star, with a total of 74 students actively engaging in the voting process, resulting in a questionnaire response rate of 97.46%. The questionnaire results indicate that the majority of students have positive opinions regarding the new teaching mode. Specifically, 90.5% of students prefer this mode, 86.3% appreciate the time flexibility and ability to review key and challenging concepts offered by online learning, 90.5% find value in group discussions for enhancing their learning and thinking abilities, promoting critical thinking, and fostering communication among classmates, and 88.6% believe that organizing a final report helps them develop stress resistance and promotes personal growth. Regarding reverse discovery, a question was posed to determine the areas in which students feel they need to improve through learning. The results indicate that 12.6% of students identified a need to enhance their self-learning ability, 31.8% expressed a desire to improve their initiative in learning, 25.7% recognized a need to enhance their teamwork skills, and 29.9% acknowledged a need to improve their ability to withstand pressure. The author obtained feedback from students through a questionnaire survey, which helped assess the effectiveness of classroom teaching and provided guidance for future improvements. Additionally, the survey allowed students to identify their own weaknesses and determine the areas they need to focus on through course learning and evaluation. These measures embody the OBE teaching philosophy and accomplish results-driven objectives.

2. Conclusion

The author adheres to the principles of education and teaching, as outlined in the OBE concept. They implement teaching reforms for entrepreneurship basic courses by utilizing a mixed teaching approach that combines "large class& small class" and "online &offline" methods. The author also emphasizes the integration of theoretical teaching with case analysis, group discussions, role experiences, experience transmission, and entrepreneurial practice. Additionally, they employ a combination of process-based and achievement-based assessment methods. The instruction is consistently enhanced and refined. This not only fosters students' enthusiasm, initiative, and creativity in learning, but also cultivates and enhances their abilities to explore, understand, express, and innovate. Additionally, it effectively promotes interaction between teachers and students, resulting in a student-centered approach that emphasizes output and continuous improvement. Ultimately, this improves the education and teaching abilities of teachers. This investigation holds significant reference value for the educational reform of other courses in innovation and entrepreneurship. Nevertheless, the process of curricular teaching reform is ongoing and necessitates constant inquiry, summary, and invention. The author should engage in further contemplation and investigation regarding how to incite students' enthusiasm for learning, enhance their self-directed learning abilities, and augment their level of engagement in the online teaching process.

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References

- [1] Musa, S. Strategic Alliances, Innovation Capability, Cost Reduction, Customer Loyalty and Competitive Advantage in B2B Alliances. in European Conference on Innovation and Entrepreneurship vol. 17 361–369 (2022).
- [2] Kreiser, P. M., Marino, L. D. & Weaver, K. M. Assessing the psychometric properties of the entrepreneurial orientation scale: A multi-country analysis. *Entrep. theory Pract.* 26, 71–93 (2002).

- [3] He, A. J. & Ma, L. Corporate policy entrepreneurship and cross-boundary strategies: How a private corporation champions mobile healthcare payment innovation in China? *Public Adm. Dev.* 40, 76–86 (2020).
- [4] Audretsch, D. Entrepreneurship research. *Manag. Decis.* 50, 755–764 (2012).
- [5] Naude, W. Entrepreneurship in economic development. (2008).
- [6] Hisrich, R. D., Peters, M. P. & Shepherd, D. A. *Entrepreneurship*. (McGraw-Hill Education, 2017).
- [7] Stevenson, H. H. *A Perspective on Entrepreneurship*. vol. 13 (Harvard Business School Cambridge, MA, 1983).
- [8] Baron, R. A. & Shane, S. Entrepreneurship: A process perspective. *Psychol. Entrep.* 19–39 (2007).
- [9] King, J. A. & Evans, K. M. Can We Achieve Outcome-Based Education?. *Educ. Leadersh.* 49, 73–75 (1991).
- [10] Morcke, A. M., Dornan, T. & Eika, B. Outcome (competency) based education: an exploration of its origins, theoretical basis, and empirical evidence. *Adv. Heal. Sci. Educ.* 18, 851–863 (2013).
- [11] Spady, W. G. & Marshall, K. J. Beyond Traditional Outcome-Based Education. *Educ. Leadersh.* 49, 67–72 (1991).
- [12] Spady, W. G. *Outcome-Based Education: Critical Issues and Answers*. (ERIC, 1994).
- [13] Atmojo, A. E. P. & Nugroho, A. EFL classes must go online! Teaching activities and challenges during COVID-19 pandemic in Indonesia. *Regist. J.* 13, 49–76 (2020).
- [14] Ferri, F., Grifoni, P. & Guzzo, T. Online learning and emergency remote teaching: Opportunities and challenges in emergency situations. *Societies* 10, 86 (2020).
- [15] Brom, C. et al. Mandatory home education during the COVID-19 lockdown in the Czech Republic: A rapid survey of 1st-9th graders' parents. in *Frontiers in Education* vol. 5 553383 (Frontiers, 2020).
- [16] Heilporn, G., Lakhal, S. & Bélisle, M. An examination of teachers' strategies to foster student engagement in blended learning in higher education. *Int. J. Educ. Technol. High. Educ.* 18, 25 (2021).