

Reform and Practice of the “Digital Economy” Course Integrating Innovation and Entrepreneurship Concepts

Xin Su, Yue Zhao*

School of Business, Guilin University of Electronic Technology, Guilin, Guangxi, China

**Corresponding Author.*

Abstract: Based on the teaching objectives, teaching content and teaching methods of “Digital Economy” course, as well as the outstanding problems and challenges encountered during the teaching process, the concepts of innovation and entrepreneurship is integrated. Drawing lessons from constructivism theory, procedural structure theory and entrepreneurship education theory, this paper emphasizes the connection between the theoretical teachings and entrepreneurship practice of “Digital Economy” course. An innovative teaching reform model including demand analysis, theoretical integration, task-driven and practical simulation is put forward. This model aims to incorporate innovative and entrepreneurial thinking training into the “Digital Economy” course in terms of knowledge, skills, and qualities, with the expectation of addressing the lack of innovation and entrepreneurship elements in digital economy teaching. This practice will promote the construction of new liberal arts, better meet the urgent demand for high-quality talent training in the digital economy driven by innovation and entrepreneurship, and cope with the new round of information revolution.

Keywords: Digital Economy; Curriculum Reform; Innovation and Entrepreneurship

1. Introduction

The digital economy is one of the most transformative economic forms of the 21st century, based on information and communication technology (ICT). Through digitized information and networked connections, it promotes the transformation of economic models and industrial upgrades. Against the backdrop of digital transformation, the digital economy has become a new engine

driving regional economic growth. There is an urgent need to cultivate students' theoretical knowledge and practical skills in the digital economy to adapt to the new demands of future societal development [1]. However, traditional “Digital Economy” courses are often overly theoretical and lack tight integration with industrial practices, making it difficult for students to apply what they have learned to solving real-world problems [2]. Additionally, there is a general lack of fostering an entrepreneurial and innovative spirit within current 'Digital Economy' courses, which is not conducive to students seizing opportunities in the forthcoming wave of the digital economy [3].

The reform of the “Digital Economy” course, incorporating concepts of innovation and entrepreneurship, aims to address existing educational issues. This will enable students to better understand the development trends of the digital economy, master the application of digital technologies, and develop their innovative thinking and entrepreneurial capabilities [4,5]. Not only will this enhance students' employability, but it also helps in nurturing future application-oriented talents in the digital economy [6].

2. Analysis of the Main Problems and Reasons in the Construction Process of the 'Digital Economy' Course

2.1 Challenging Problems

2.1.1 The problem of theorizing course objectives

The course objectives focus excessively on knowledge transmission, neglecting the cultivation of students' innovation and entrepreneurship abilities. Currently, the objectives of the “Digital Economy” course place too much emphasis on imparting knowledge, while neglecting the cultivation of students' capabilities in innovation and

entrepreneurship. This limitation hampers students' ability to apply digital technologies in innovative and entrepreneurial practices [7]. As one of the key courses in the discipline of economic management within the digital era, the core of the Digital Economy is innovation and entrepreneurship. Innovation is not merely a process of accumulating technology or knowledge; it is also a mindset and a spirit. If the educational process fails to stimulate students' curiosity, critical thinking, and creativity, they may lack innovative approaches and ideas when encountering new problems in the future. Especially in activities related to innovation and entrepreneurship, how to integrate acquired knowledge with real-world situations, and flexibly apply relevant theories from the "Digital Economy" course, has become an important issue jointly concerned by government departments, enterprises, and institutions of higher learning. The aim is to foster applied talents who can meet the needs of market economic development and serve local economic construction.

2.1.2 The problem of mismatch between teaching content and innovation& enterprise needs

The course content cannot meet the continuously upgrading demands of innovation and entrepreneurship in the digital economy. The field of the digital economy is ever-evolving, with new technologies, applications, and business models emerging constantly. If the course content does not keep up-to-date to reflect the latest market dynamics and technological advancements, students will fail to grasp cutting-edge knowledge and skills, making it difficult for them to meet the needs of future innovation and entrepreneurship. The rapid development of the digital economy requires that course content be able to timely reflect the newest market trends and technological progress. However, the existing "Digital Economy" course shows evident lag in this aspect, failing to meet the current needs of the digital economy domain. With the rapid development of the digital economy and the increasing importance placed on innovation and entrepreneurship education, some traditional "Digital Economy" course contents have become outdated and no longer fit the needs of the times. This results in a significant gap between the teaching effectiveness of the

course and its practical application. Therefore, the course content needs continuous updating to follow the development and transformation trends of new-generation information technology, integrating the mindset of innovation and entrepreneurship into student cultivation. The core of the digital economy is the application of technology, so there should be ample cases and practices in the course. For some new typical cases, it is necessary to incorporate them in a timely manner into the teaching content of the digital economy overview.

2.1.3 The problem of insufficient integration between theoretical knowledge and practical application

Students lack experience in applying the digital economy in innovation and entrepreneurship, failing to combine theoretical knowledge with practical application. The theoretical knowledge students acquire in class needs to be combined with practical application. While students may excel in theoretical learning, if the course content does not provide real business environments or entrepreneurial scenarios for practice [8], they will find it challenging to understand how to apply theory to practice. Without practical components, students struggle to gain experience in solving real-world problems, which is a significant shortcoming for nurturing future entrepreneurs and innovators. While theoretical knowledge is important, practical ability is equally indispensable. A lack of practical experience can hinder innovative thinking as students do not have enough opportunities to experiment, fail, and learn from their experiences. Students' understanding of the digital economy often remains at a theoretical level due to a lack of practical operational experience and opportunities for innovative practice, which limits their ability to translate knowledge into practical applications. The bias towards theoretical teaching and the inadequacy of practical teaching content have become pressing issues that need to be addressed.

2.2 Analysis of the Reasons for Above-mentioned Problems

2.2.1 Insufficient emphasis on innovation and entrepreneurship in course objectives

Under the guidance of innovation and entrepreneurship education, the course

objectives focus heavily on conceptual introductions and theoretical cognition, lacking elements that encourage students to explore entrepreneurial opportunities. This neglects the cultivation of students' individual development and creativity, failing to meet the needs of cultivating innovation capabilities among contemporary college students. The “Digital Economy” course should balance knowledge transmission with the cultivation of innovation and entrepreneurship capabilities to better adapt to the needs of the future labor market, providing students with comprehensive skills and competencies to stand out in the continuously evolving digital age.

2.2.2 Slow updates to teaching content and lag between theory and case studies

Currently, the content of many “Digital Economy” courses still lingers on traditional economic theories and basic digital concepts, lacking in-depth analysis of emerging technologies such as artificial intelligence and blockchain. These courses do not adequately reflect the latest developments in the digital economy, leaving students uninformed about the latest technological trends, innovation models, and business models. The process of updating textbooks, designing courses, and training teachers requires time and resources, often resulting in slow updates to the content of “Digital Economy” courses, failing to keep pace with the rapidly developing needs of the information age and unable to meet the escalating requirements of innovation and entrepreneurship.

2.2.3 Overemphasis on theoretical teaching with insufficient practical content

In traditional classrooms, lecturing often takes up a large portion of the “Digital Economy” course teaching, with a heavy tilt towards theoretical instruction. This approach no longer suits the characteristics of today's students, who are strongly self-aware, distinctively individualistic, and interested in new things. It leads to a lack of immediate gratification and accomplishment from learning, reducing students' interest and enthusiasm. Within the limited total class hours, practical content occupies a small proportion, meaning students do not receive adequate training in the application of digital economy skills and lack the experience of applying principles in innovation and

entrepreneurship. As a result, students face difficulties in solving real-world problems. The current design of practical components is insufficient, and students lack opportunities to participate in simulated business environments where they can apply their knowledge and skills. More practical projects need to be designed to allow students to experience the operations of the digital economy firsthand.

3. Theoretical Foundations and Teaching Reform Measures and Content

3.1 Theoretical Foundations or Educational Philosophies for Teaching Reform

3.1.1 OBE educational philosophy

OBE education concept combines humanistic psychology theory and constructivism theory, and emphasizes the “student-centered” teaching method. The main principle of OBE is to always place the student at the center of the course, orienting the teaching process towards achieving learning outcomes, and setting the capabilities students gain through course study as the goals for course design and implementation [9].

3.1.2 Constructivist theory

Constructivism posits that knowledge is not passively absorbed but actively constructed by the cognitive subject. In teaching, we should encourage active participation from students, enabling them to construct knowledge through practice, inquiry, and collaboration [10]. Therefore, we will introduce case studies, group discussions, and project-based practices into the curriculum to stimulate students' interest in learning and foster innovative thinking.

3.1.3 Work process structure theory

An effective teaching process structure should not be designed as a warehouse for knowledge accumulation. Instead, it should be based on the actual work process. The universal “working process”, which encompasses complete actions and thought processes, should be used as a basis for instructional design, transforming the real-world work process into a structured format suitable for teaching [11].

3.1.4 Entrepreneurship education theory

Entrepreneurship education theory advocates fostering students' entrepreneurial awareness, capabilities, and spirit through education [12]. In the context of the digital economy,

entrepreneurship education should be combined with digital technology, enabling students to identify business opportunities and create value within digital environments.

3.2 Major Teaching Reform Measures and Content

3.2.1 Establish a research mechanism to scientifically position course objectives

Learning in the field of the digital economy emphasizes maintaining close ties with enterprises. Based on the work process structure theory, it is essential to fully understand the typical work processes and tasks associated with the digital economy, thereby designing a course and organizing actions oriented around these work processes. The focus is on cultivating students' ability to make correct judgments and take appropriate actions in complex work scenarios. To accurately grasp the demand of enterprises and startups for talent in the digital economy, it is necessary to establish a research mechanism that conducts regular, extensive surveys within companies and startup organizations. This helps determine the detailed content of typical work processes and tasks in the digital economy. After comparative analysis, these can be broken down into the typical work processes and capability requirements of "digital industrialization" and "industrial digitalization," forming the basis for defining course objectives. Defining course objectives should not only be employment-oriented but should also attempt to break professional boundaries, cultivating students' multi-faceted abilities, integrating the concept of innovation and entrepreneurship education, and fostering students' digital literacy throughout the entrepreneurial process. Additionally, to cultivate students' innovative thinking and practical abilities, active cooperation with the industry is encouraged, conducting regular in-depth visits to companies and startups to obtain the latest industry data and cases. At the same time, course objectives should be regularly reviewed and updated, and a case library should be built, introducing the latest cases, research findings, and practical experiences, while encouraging teachers to actively participate in industry research to maintain sensitivity to the digital economy sector.

3.2.2 Reintegrate teaching content to

incorporate entrepreneurship education

Design the teaching process based on the work process structure, i.e., according to typical tasks and the occupational capability requirements of the digital economy, incorporating entrepreneurial concepts to define teaching content and design teaching modules. The adjusted teaching content emphasizes practical aspects of innovation and entrepreneurship in the digital economy, eliminating sections that are heavily theoretical and rarely involved in the entrepreneurial stage. For example, in the "Digital Economy" teaching module, add content on designing a business plan for a digital economy enterprise, requiring students to write a business plan focusing on industry and market analysis, market positioning and segmentation, target market demand analysis, product marketing strategies, technical solutions, construction costs, financing plans, and risk control. Additionally, the course content should cover topics such as transaction mechanisms in the digital economy, network externalities and market structures of the digital economy, and digital transformations in macroeconomic operations, all while adhering to the requirements of entrepreneurship education.

When incorporating entrepreneurial-oriented content into the course, optimize the student evaluation system by adding elements that encourage students to explore entrepreneurial opportunities; clarify the course evaluation mechanism by including the cultivation of entrepreneurial and innovative capabilities, such as setting practical projects and business plans to assess students' actual abilities.

3.2.3 Comprehensively apply action-oriented teaching methods to enhance student participation

The teaching methods primarily focus on action-oriented approaches, integrating task-driven project-based learning, situational simulation, multimedia instruction, case study discussions, and more. The approach emphasizes placing students at the center of digital economy education, with teachers playing a guiding role. This allows students to complete their learning process within practical work scenarios, thereby strengthening their grasp of digital economy knowledge and enhancing their professional competence and innovation capabilities. For

example, using the teaching of digital services as an illustration, the application of action-oriented teaching methods can be demonstrated: instructors first divide students into groups. After providing a detailed explanation of digital service knowledge, they propose learning tasks, including modules such as digital finance, digital tourism, digital education, digital healthcare, digital transportation, and e-commerce. Each group selects one task module or is assigned one by the instructor. After task allocation, students engage in exploratory learning in their groups

outside of class. The preparation process is completed outside of class time, with each group compiling their findings into a PowerPoint presentation. During the next class session, a representative from each group presents their report, followed by evaluations from other groups. Since every student participates in the preparatory work outside of class, each student has a foundational understanding of the topic, enabling them to make judgments and provide feedback on the presentations given by other groups. (See Figure 1 for details.)

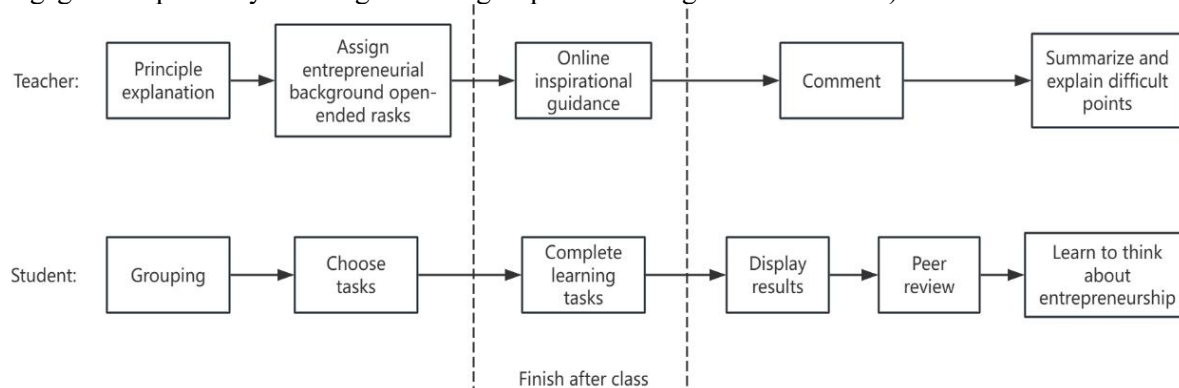


Figure 1. Application of Action-Oriented Teaching Method

3.2.4 Emphasize practical teaching components to stimulate students' interest and passion for innovation and entrepreneurship

Setting up practical teaching components that are organically integrated with the course content is a concentrated manifestation of the action-oriented teaching method and an essential part of the 'Digital Economy' course reform. By increasing students' opportunities for practical operation, it enhances their innovation capabilities and entrepreneurial skills. After the completion of the basic teaching content, ERP (Enterprise Resource Planning) simulation exercises can be utilized for intensive training, allowing students to familiarize themselves with the operational processes of digital economy enterprises. Through hands-on experience, students can personally experience the application of the digital economy in innovation and entrepreneurship. ERP simulation exercises are characterized by competitiveness and fun, effectively stimulating students' interest and engagement. In these exercises, students not only improve their ability to apply professional knowledge but also enhance their innovation awareness and entrepreneurial capabilities. Additionally, the knowledge gained in the

digital economy classroom can be combined with "innovation and entrepreneurship" competitions. For example, course instructors can integrate the content of competitions such as "Internet Plus," "Challenge Cup," and "Chuang Qingchun" into classroom teaching and actively lead students to participate in various competitions, forming a "competition-teaching integration" model that significantly improves teaching quality and ignites students' passion for innovation and entrepreneurship.

In summary, the schematic diagram of the teaching reform approach for the "Digital Economy" course is shown in Figure 2.

4. Practical Achievements

4.1 Modernization of Course Content

The reformed course includes the latest theories, practical cases, and cutting-edge technologies in the digital economy, ensuring that the subject matter remains timely and forward-looking. The course incorporates the most recent enterprise research data, as well as the application and understanding of key technologies such as cloud computing, big data, blockchain, the Internet of Things (IoT),

and artificial intelligence.

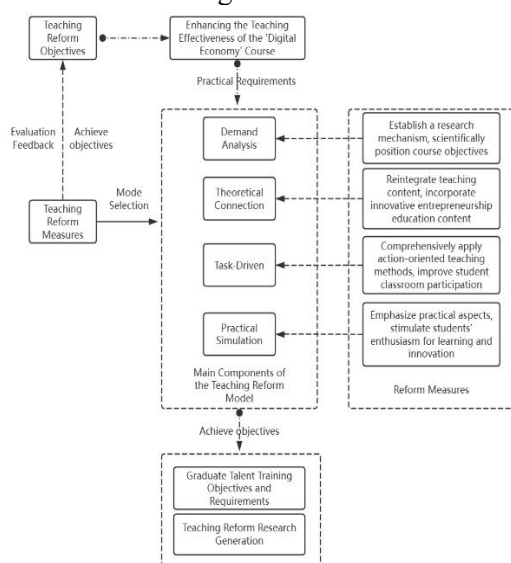


Figure 2. Schematic Diagram of the Teaching Reform Approach for the 'Digital Economy' Course

4.2 Full Implementation of OBE Philosophy

Based on typical tasks and occupational capability requirements, the course integrates innovation and entrepreneurship concepts to define teaching content and design teaching modules. The existing teacher-centric, theory-heavy teaching model and single assessment method have been changed, moving students away from passive acceptance of knowledge theory to active participation in learning, enhancing their practical engagement. This aligns with the contemporary educational requirement for “specialized + skilled + distinctive” talents, following the OBE (Outcomes-Based Education) philosophy of building theory, refining practice, and exploring specialties as output-oriented goals. The original teaching model has been disrupted, making the cultivation plan more consistent with the OBE philosophy.

4.3 Enhancement of Students' Innovation and Entrepreneurship Capabilities

An educational model centered around students has been established, focusing on personalized education and the cultivation of lifelong learning abilities. This model aims to nurture innovative talents who possess a solid theoretical foundation and can tackle real-world business challenges. Students gain a deeper understanding of various aspects of the

digital economy and, through practical learning, can transform theoretical knowledge into practical skills. Their entrepreneurial awareness is significantly enhanced, and through entrepreneurial simulations and case analyses in the course, they learn how to identify business opportunities and develop entrepreneurial plans. Students' innovative capabilities are improved through practical learning and teamwork, allowing them to apply creative thinking when solving problems.

4.4 Overall Improvement in Teaching Quality

Innovations in teaching methods have made classes more lively and interesting, enhancing students' motivation to learn and their participation levels. Teachers update course content in real-time and adopt new teaching technologies, improving teaching effectiveness and the learning experience for students. Continuous assessment and feedback mechanisms ensure ongoing monitoring and improvement of teaching quality, guaranteeing the realization of teaching objectives.

5. Conclusions

The innovations in the teaching reform of the 'Digital Economy' course mainly manifest in the teaching model and methods, emphasizing a student-centered approach. The specific conclusions are as follows.

One is to propose an integrated teaching reform model that includes needs analysis, theoretical integration, task driven, and practical training simulation. This model aims to integrate innovation and entrepreneurship thinking training into the 'Digital Economy' course across three dimensions: knowledge, capability, and quality, aiming to deeply address the lack of innovation and entrepreneurship elements in the teaching of the digital economy. Simultaneously, by improving the effectiveness of the 'Digital Economy' course, it aims to solidly advance the construction of new liberal arts disciplines, thereby effectively responding to the urgent need for high-quality talent in the field of digital economy driven by innovation and entrepreneurship in the face of a new round of information revolution. Moreover, the innovative proposal of this integrated teaching reform model is beneficial in strengthening the

connection between the theory of the digital economy and the actual digital transformation development of enterprises, enhancing students' classroom participation, stimulating their interest in learning and passion for innovation and entrepreneurship, further deepening the reform of the teaching model of the 'Digital Economy', and effectively improving the quality of enterprise-oriented talent cultivation and the effectiveness of innovation and entrepreneurship talent cultivation in the digital economy field.

Another is to propose an action oriented teaching method as the main approach, combined with task driven project-based teaching method, situational simulation teaching method, multimedia teaching method, case discussion method and other comprehensive methods to reform the course of "Digital Economy". Task-based teaching focuses on training professional skills and constructing professional theoretical knowledge around core tasks. "Based on tasks" is the core idea of this teaching method. This paper integrates the content of the 'Digital Economy' course into an action-oriented curriculum system, establishing a course reform centered around projects and aimed at cultivating students' professional capabilities. Furthermore, during the implementation of the action-oriented teaching method, multiple teaching methods such as task-driven project teaching, scenario simulation teaching, multimedia teaching, and case discussion methods are comprehensively utilized. The expectation is to explore feasible paths to significantly enhance the teaching quality of the 'Digital Economy' course and the learning experience of students from the perspective of collaborative teaching links, including needs analysis, theory integration, task-driven, and simulation practice, better adapting to the needs of internet economy development, information technology development, and the reality of cultivating innovative and entrepreneurial talents in the digital economy field.

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