

# Cultivating Developmental Thinking in College Students' Innovation and Entrepreneurship: A Review of *Innovation and Development Studies*

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## Abstract

The book *Innovation and Development Studies* systematically elucidates the principles, laws governing, and methodologies for innovation, while exploring critical issues in cultivating college students' innovative and entrepreneurial capabilities. Departing from conventional approaches that treated innovation, development, philosophy, and education as isolated ends, this book establishes a unified framework integrating fundamental principles of celestial creation, terrestrial creation, and human creation. Organized around the dialectical unity of subjectivity and objectivity, it centers on innovation-development dynamics to enhance college students' consciousness and cultivating innovative competencies, establish harmony in natural systems, global relations, and social structures, and advance socialist civilization. The monograph provides practical guidance for promoting college students' innovation-entrepreneurship initiatives, enhancing teaching quality, achieving social governance through institutional innovation, and resolving complex societal challenges.

## Keywords

Innovation; Development; Fundamental Principles; Natural Laws; Methodologies.

## 1. Generation Introduction

In today's society, and particularly among university students, there is a fervent pursuit of innovation and entrepreneurship—everyone is striving to stand out and to advance. However, there remains a significant lack of talent guided by solid innovation theories, making it difficult to produce meaningful and successful outcomes. Several recurring problems often emerge in this context: First, students tend to be disoriented at the outset, with research topics that lack both autonomy and proper guidance. Second, there is a disconnect in information flow, compounded by weak team dynamics, unbalanced competence levels, and a lack of collaborative spirit, making it difficult to choose forward-looking topics. Third, thinking remains constrained, and problems are not examined thoroughly. Fourth, the goals of innovation are often unclear, which hampers the selection of projects that could positively contribute to social development. Fifth, there is an insufficient integration of theory and practice.

Upon reading *Innovation and Development Studies*, I was enlightened by its accessible yet profound analysis of innovation theories and its insightful synthesis of innovation methodologies. It felt as though a door had opened—an endless stream of research ideas emerged in my mind. In particular, the book sparked a clear vision regarding the construction of an online English learning platform in higher education as a means to enhance teaching. Deeply impressed and inspired, I found myself compelled to appreciate, analyze, and share the book's core insights with fellow readers.

## 2. Organization of the Text

### 2.1. Background of the research

Before delving into the author's theories on innovation and entrepreneurship, it is important to first understand the intellectual and experiential journey reflected in the book. This background not only enriches our grasp of the knowledge presented, but also allows us to learn from the author's experience in innovation and entrepreneurship, his analytical approach to problem-solving, his resilience and dedication, as well as his broad vision and admirable moral character. By doing so, readers may, as the book hopes and exemplifies, achieve personal growth, pursue their dreams, and ultimately make lasting contributions to both higher education and the broader society—with no regrets.

According to available information, the author is an engineer by training, with a background in aeronautics. He has participated in the localization and development of technologies such as air conditioning systems for large passenger vehicles and refrigeration units for refrigerated trucks. His involvement extends to the development of air compressors, cold storage equipment, agricultural machinery, and environmental protection devices. In these projects, he consistently played a key leadership role in driving innovation and made significant contributions without seeking personal gain.

The author has invented various technologies, including composite metal stamping dies, jet-type silencers for air compressors, and sliding-row seeders with fertilization functions. These innovations have earned him multiple patents, as well as awards such as the Government Science and Technology Progress Award and the Technological Invention Award. In addition, he has provided guidance to numerous enterprises and public institutions, helping them overcome difficulties and achieve sustainable and stable development—all of which are rooted in the foundational work he carried out with diligence and foresight.

The book recounts that, during a period when the author was already overwhelmed with numerous responsibilities, farmers from his hometown approached him with a request: to invent a seeder capable of planting carrots. Believing that societal needs are the inventor's responsibility, the author took up the challenge and began researching seeding machinery. As a result, he invented a translational row-distribution precision seeder and fertilizer applicator, a device that not only met the demand for carrot planting but also elegantly resolved the broader issue of crop sowing and fertilization. The innovation was met with widespread acclaim from both farmers and agricultural experts, and the author was subsequently granted a patent for his invention.<sup>[1]</sup>

He later applied his innovation theories to guide the development of the seeder, and conversely used the practical experience of developing the seeder to further validate, enrich, and refine his theoretical framework. These two endeavors complemented each other, creating a virtuous cycle of theory and practice. The author's scientific spirit and pragmatic approach are exemplary and worthy of emulation by every reader.

*Innovation and Development Studies* not only elucidates the fundamental principles and laws of innovation, and synthesizes various methods for innovation and entrepreneurship, but also offers practical guidance on how to realize development goals and personal aspirations. In addition, the book explores universal laws, the essential relationship between humans and nature, and the underlying principles of philosophy, education, society, and other objective phenomena. It teaches not only how to create material prosperity and spiritual purpose, but also how to attain a spiritually fulfilling life through personal effort, even in the face of poverty or adversity.

The author's accomplishments are deeply inspiring. His remarkable success rate in innovation and entrepreneurship commands admiration. From science and literature, to cosmology and

cognition, from engineering to writing, from education to philosophy—he has demonstrated excellence across disciplines. This exceptional capacity can be attributed to several key qualities: (1) A Heart of Gratitude: According to his biography, his family endured severe hardship before his birth—his home was burned twice by Japanese invaders and repeatedly struck by floods. At the time of his birth, the family had nothing; all six members lived in a makeshift hut that his father could carry alone. He attributes his current achievements and quality of life to the Chinese Communist Party and the Chinese people. (2) A Spirit of Diligence and Aspiration: In all his endeavors, he combines intellectual rigor with tireless effort, always striving for excellence. He is committed to contributing both wisdom and strength to societal development. (3) A Passion for Learning: Industrious and insightful, he possesses the rare ability to deeply grasp complex concepts. His academic performance has consistently earned the admiration of his peers. (4) Meticulous and Innovative: He is known for his thoroughness, always thinking through issues in great detail. His attentiveness has ensured that ignorance or oversight has never compromised his work. (5) A Visionary Mindset: With a global outlook and deep concern for social harmony, he remains steadfast in his commitment to the grand ideal of communism. (6) Perseverance and Determination: Even after leaving the aviation industry, he continued to work across fields such as air compressors and air conditioning. Yet, he always held onto a dream of “returning to the sky.” After the age of 70, he invented a fluid pressure transmission device that was incorporated into an AI-powered flying vehicle. This invention addresses human transportation and military airdrop challenges and can also be used as an air compressor, water pump, or ship propeller. Both of these inventions have the potential to be developed into strategic emerging industries at the national level.

## 2.2. Analysis of the Principles of Innovation

The language used throughout the book is concise yet profound—often a few words suffice to illuminate a complex issue. For example, the author’s interpretation of the term principle is: “the essence of how something originally comes to be.” Though the text presents such ideas in an accessible manner, the underlying analysis is rigorous and relentless in its pursuit of clarity and depth.

When it comes to scientific problems, the author compares them to a thin paper window: before the surface is pierced, even the most familiar questions may remain unexplained; only when someone breaks through do the clouds part and clarity emerge. We speak of innovation daily, yet few have attempted to thoroughly understand the principles, laws, and methods behind it. We rely on our brains constantly—even in dreams—but rarely reflect on how novel things are truly created. At best, most people’s innovative drive is sparked by admiration for others’ achievements, without a fundamental understanding of epistemological innovation. As a result, many remain trapped in the cycle of “creating for the sake of creation,” without grasping the systematic process through which dreams are transformed into reality.

This book, however, views and analyzes innovation from a cosmological perspective. Its approach is logical, well-reasoned, and supported by evidence. It proposes that all innovations emerge through three distinct modes of creation, each governed by its own principle. Let us now explore and appreciate these three foundational principles of innovation as outlined by the author.

### 2.2.1. Celestial Creation (Tian Zao)

The first mode of innovation described in the book is celestial creation, which refers to the original creation of all things by the immense energy released during the Big Bang. According to the author, this cosmic event gave rise to three fundamental categories of existence: (1) The 118 chemical elements and the material substances composed of these elements, which the author terms element-based matter (you yuan wu zhi). (2) Non-elemental matter, which includes light, electricity, magnetism, heat, force, and various forms of radiation—phenomena

that do not consist of chemical elements but play vital roles in physical processes. (3) Universal laws of motion and order, such as the Pythagorean theorem, Newton's laws, Ohm's law, the principles of flight, computer design logic, the seven musical notes, and even constants like  $\pi$ . The author collectively refers to these as celestial laws (tian li).

The principle underlying celestial creation is qualitative transformation, as opposed to quantitative change. In this framework, qualitative change is equated with creation, while quantitative change is associated with development. Understanding this distinction yields several important theoretical and practical implications: It provides a coherent explanation for the long-debated philosophical distinction between qualitative and quantitative change. It offers a breakthrough in the study of creatology—the science of creation. It enables a more accurate understanding of the origins of objective phenomena.<sup>[2]</sup> It helps learners establish a conceptual link between the knowledge they acquire and their capacity for innovation.

The book opens with a prelude titled *On Innovation*, which offers a comprehensive analysis of qualitative transformation from scientific, historical, and epistemological perspectives. It addresses key cognitive, technical, and environmental challenges associated with the innovation process. In doing so, it demystifies creation, encourages rational understanding, and cultivates a more conscious and intentional approach to innovation.

### 2.2.2. Terrestrial Creation (Di Zao)

Traditional understandings of nature have often lacked scientific clarity, leaving the origins of plants, animals, and humans shrouded in speculation. While some have attributed creation to divine will—such as the belief that “God created the world”—others have posited folk theories like “all things grow from the earth.” However, the author offers a novel and rational explanation grounded in physical and chemical science. He begins by asking two critical questions: (1) What substance undergoes the most significant physical change on Earth? The answer is water. (2) What substances are involved in the most significant chemical transformations? The answer is carbon, hydrogen, and oxygen. From this inquiry, the author proposes that nature is not spontaneous, but rather, a product of the Earth's dynamic interactions with solar energy. He explains that the sun exerts continuous influence through light, electricity, magnetism, heat, and force—triggering physical changes in water and air, which in turn induce chemical reactions among carbon, hydrogen, and oxygen within the cells of living organisms. These reactions, alongside meteorological phenomena such as wind, thunder, rain, and snow, gradually construct the organic systems that give rise to plants, animals, and microorganisms. Through this lens, the principle of life itself is revealed to be the transformation of solar energy.

This paradigm-shifting insight leads to a series of major revelations: (1) it demystifies photosynthesis: plant cells synthesize hydrocarbons to absorb solar energy, expelling oxygen as a byproduct. (2) It reinterprets the function of the liver in animals—not as primarily detoxifying or producing energy, as commonly believed in medicine—but as a site for hydrocarbon decomposition. (3) It challenges traditional medical views by proposing that the lungs serve primarily as blood cell generators: combining hydrogen and oxygen to form red blood cells and carbon and oxygen to form white blood cells—thereby arguing that the lungs' essential function is hematopoiesis, not merely respiration or metabolism. (4) It describes how animal cells transform blood cells into fat for storage and perform energy conversions: combining hydrogen and oxygen to produce water (excreted as urine or sweat) and carbon and oxygen to form carbon dioxide. This transformation releases solar energy, which is used for growth, labor, and temperature regulation.

The process as described adheres to both the law of conservation of matter and the law of conservation of energy, forming a logically consistent and scientifically grounded explanation of natural processes—one that aligns with ancient philosophical contemplations on the “Dao”.

The author suggests that this process resolves the longstanding enigma Laozi expressed in the cryptic phrase: “The Dao that can be spoken is not the eternal Dao”. The fundamental principle of terrestrial creation, according to the author, is that fertilization in plants and animals is equivalent to creation, while quantitative change represents development. This conception not only clarifies the origin of life but also reframes the interdependence of all living beings on solar energy transformation.<sup>[3]</sup>

Moreover, the author critiques the current state of the natural world, emphasizing that although all lifeforms—including humans—rely on solar energy conversion, they remain largely unaware of this dependency. Instead, species often prioritize self-interest, leading to ecological imbalance and destructive competition. In particular, human beings—with their vast technological capabilities and unconscious behaviors—pose the greatest threat to planetary harmony. Since nature’s own regulatory capacity is limited, it cannot meet the full demands of solar energy conversion on its own. Therefore, the author argues that human beings have been endowed with a sacred mission: to assist nature in the optimized transformation of solar energy. To fulfill this mission, humanity has been granted unique capacities for innovation and development, which distinguish it from all other species. In this view, the essence of humanity is innovation, and the essence of nature is socialism—defined here as the harmonious cooperation between humans and nature in the shared task of solar energy transformation. This insight, according to the author, represents the deeper philosophical meaning of Laozi’s statement “Dao follows Nature” (Dao fa ziran), and serves as the ideological foundation for the concept of a “shared future for humankind”.

### 2.2.3. Human Creation (Ren Zao)

The author presents a compelling framework for understanding human creativity by aligning the seven stages of innovation with the seven cognitive functions of the human brain. Specifically, innovation involves the following sequence: (1) searching for information, (2) recognizing information, (3) memorizing information, (4) generating new information, (5) expressing creative outcomes, (6) materializing results, and (7) abstracting results. These steps are precisely mirrored by the brain’s corresponding functions: sensation, cognition, memory, thinking, expression, materialization, and abstraction. This structural correspondence demystifies the cognitive process of innovation and reveals the principle of human creation: thought is creation, and quantitative change is development. The rule of innovation thus lies in the appropriate interaction between subjectivity and thought.

Based on this understanding, the author encourages individuals to consciously engage their minds to achieve innovation and miraculous transformation. According to the author, the human body serves as the vehicle of subjectivity, with subjectivity being the conscious control center. The organs of the body—brain, heart, hands, mouth, and body—are the carriers of intellectual factors, while non-intellectual factors such as attitude, passion, courage, and spirit further enhance one’s ability to innovate. These are collectively described as physiological tools of innovation. Additionally, science provides the theoretical tools, and technology provides the practical tools. When subjectivity effectively coordinates with these tools, humans can speak, act, innovate, and develop. In cases where individual capacity falls short, people can rely on others or leverage science and technology—and if such resources are unavailable, they may even invent new scientific theories or develop independent technologies. However, innovation must be guided by one key constraint: every object in nature has its inherent principle (Tian Li). Any design or innovation must align with this principle to succeed; otherwise, it is bound to fail. This idea reflects a blend of empirical observation and philosophical rigor.

The author identifies six major categories of human-created phenomena: Rituals, Culture, Art/technology, Products, Policies (instructions), Science. These represent the outcomes of material civilization. On the other hand, subjective elements—including awareness,

consciousness, attitudes, ideologies, and spirit—constitute the products of spiritual civilization. Innovation should not be narrowly understood as the creation of new entrepreneurial products alone. Instead, innovation is seen as the synthesis of subjective and objective realms, which, the author argues, provides a precise reinterpretation of the ancient concept of “the unity of Heaven and Humanity” (Tian Ren He Yi). Just as crops grow in accordance with human design (Earth-Human unity) and individuals act based on others’ words (Human-Human unity), all these phenomena illustrate the harmonious integration of subjectivity and objectivity—a solution to longstanding philosophical questions.

While the creative powers of Heaven, Earth, and Humanity are all theoretically limitless, the author notes that none can create the others’ domains; rather, they engage in complementary creation, thus advancing the world toward greater beauty and complexity. Nevertheless, individual creative capacity is limited. Therefore, the author advocates for collective innovation under the leadership of the Communist Party, arguing that only with strategic policies and team collaboration can highly complex innovations be realized. This naturalizes the Party’s core leadership role, encouraging university students to embrace a worldview that integrates Heaven, Earth, Humanity, and the Party. Through this holistic vision, students are expected to grow into capable individuals, contribute to innovation and entrepreneurship, and help build a socialist civilization.

The work thus reveals its philosophical and pedagogical intent: to guide people not only to understand objective reality but also to think in terms of universal principles, cosmic unity, and collective progress. It seeks to overcome tendencies toward innovation for innovation’s sake, or development for development’s sake. Instead, it places innovation and development at the center, aiming to awaken human consciousness and cultivate practical capacities, all with the ultimate goal of realizing a civilized socialist society. In doing so, it bridges natural and social sciences, and harmonizes teaching with moral education.<sup>[4]</sup>

The author further elaborates that subjectivity is not only the controller of human creativity, but also the key determinant in how creative results are handled. For instance, using nuclear energy: subjectivity can guide its development for the benefit of humanity, leave it unmanaged, or misdirect it toward harm. Therefore, subjectivity governs directionality, and its choices reflect the level of a society’s civilization. Correctly handling the fruits of innovation represents a mark of progress; mismanagement signals regression, often driven by personal gain or the defense of vested interests.

In conclusion, the author declares that “subjectivity determines everything”. He argues that a balanced development of material and spiritual civilizations is the only path toward sustainable societal advancement. By grounding the innovation-development process in the dual creation of tangible and intangible outcomes, the work presents a comprehensive theory of human creativity, offering both a practical and ethical framework for building the future.

### 2.3. Reflections

Through an in-depth appreciation of the innovation principles discussed above, several key insights emerge: This book has the potential to eliminate long-standing ignorance in humanity’s understanding of the universe, nature, and the human condition. It can enhance individuals’ capacity for innovation, including the efficiency, quality, and sophistication of their creative output. It can elevate one’s awareness on multiple fronts—natural awareness, self-awareness, developmental awareness, and socialist consciousness. It inspires people to consciously use their intellect to create new phenomena.<sup>[5]</sup> It fosters mass innovation and grassroots entrepreneurship. It can significantly improve the quality of work across various sectors, including education. It offers a means to dissolve ideological confusion and move toward a well-governed, orderly socialist society. It teaches individuals to become civilized citizens, engage in civilized practices, and contribute meaningfully to a civilized society.

These reflections have had a direct impact on my own teaching of network technology in higher education. They have empowered me to teach with greater confidence and intellectual clarity, continually pushing the boundaries of my own learning. More importantly, these principles have helped dispel confusion among students regarding both their academic purpose and the meaning of socialism. As a result, students have realigned their motivations, exhibited greater enthusiasm for learning, and shown a marked increase in aspirations—particularly in their interest in pursuing graduate studies. The overall academic atmosphere has significantly improved. Notably, there has been a surge in participation in innovation-related activities among both students and faculty. The quality of innovative ideas and outcomes has improved, and the volume of tangible results has increased substantially compared to previous years.

In sum, even a single chapter devoted to the analysis of innovation principles reveals the book's immeasurable potential to uplift humanity. Its influence extends far beyond theoretical discourse, offering practical guidance for personal development, educational reform, and social progress.

### 3. Conclusion

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