

Educational Innovation Research

Whioce Publishing Pte. Ltd.

10 Anson Road #10-13a International Plaza

Singapore (079903)



WHIOCE PUBLISHING PTE. LTD.

PROVIDING
FIRST-CLASS SCIENTIFIC INFORMATION
FOR TOP SCHOLARS

Educational Innovation Research

Focus and Scope

Educational Innovation Research (EIR) is a peer-reviewed academic journal dedicated to advancing research and scholarship in the field of education innovation. Our mission is to provide a platform for educators, researchers, and practitioners to exchange ideas, share innovative practices, and explore the latest trends and developments in educational innovation.

About Publisher

Whioce Publishing was established in Singapore in 2014 with a global orientation. The core business of the company focuses on publication of academic journals and organization of international academic conferences, at the same time providing educational trainings, consultations on scientific and technological information, translation services and publications of e-books.

Albeit being a young company, Whioce Publishing has placed huge focus on initiating and publishing top quality international academic journals. The eventual aim is to be indexed by top-notch databases such as EI, SCI, SSCI and AHCI, at the same time growing to become a recognized international academic publishing company that provides a knowledge sharing and communication platform to top researchers all over the world.

EXPANSION STRATEGY: Constantly expanding and strengthening collaborations with publishing companies and relevant industry associations all over the world, building a group of knowledgeable academic personnel and a quality management team. Disseminate scientific and technical information of high quality, gradually growing to a publishing enterprise with worldwide influence.

Publisher Headquarter

WHIOCE PUBLISHING PTE. LTD.

Publishing Office: 10 Anson Road #10-13A International Plaza Singapore 079903

Website: whioce.com

TEL: +65-91818774

Email: info@whioce.com

C

ONTENTS

- 1 Research on Strategies for Cultivating Critical Thinking in Chinese Reading Teaching of Middle Schools**
Wen Zheng
- 6 A Review of the Intergenerational Changes in the Work Values of the New Generation of Employees**
Yaqi Zhang
- 13 The Construction of “Learning-Practice-Match-Assessment” Integration Mode in Soccer Teaching**
Peiru Li
- 19 Pathway for the Development of Digital Teaching Resources for the “Supply Chain Management” Course in Vocational Colleges**
Yujie Li
- 24 An Analysis of Conceptual Metaphors in Harry Potter and the Philosophy’s Stone from the Perspective of Cognitive Linguistics**
Yiming Li, Yuanpeng Huang
- 36 The Practical Application of Big Data and Artificial Intelligence Technology in Educational Management**
Chenglin Lu
- 42 Research on Inheritance and Development of Lotus Lantern Dance in Changge Old City, Henan Province**
Yangyang Lyu, Rita Mee Mee Wong
- 47 The Integration and Innovation of Virtual Reality Technology in Film Production**
Jingwen Zhang
- 54 Barriers to Effective Inclusive Education in Primary School in China: Perspectives from Teaching Practice**
Danyang Sun
- 60 Research on the Innovative Path of Art Education Integration Empowered by Artificial Intelligence**
Xingyang Wang, Yutong Zhu

C

ONTENTS

- 66 **On the Legal Nature of Live-Streaming Sales**
Yifan Lin, Chuyi Peng
- 71 **Integrating Technology into Music Learning: A Tool for Enhancement, Not Substitution**
Lan Yao
- 77 **Triple Dimensions of Precision Teaching in Physical Education under the “Four New” Initiatives Framework: Mechanism Development, Current Bottlenecks, and Pathway Innovations**
Wensu Dong, Rui Liu, Shuyong Liu
- 84 **Social Contract Theory and Legitimacy: From History to Modern Times**
Ying Gao, Jialei Cao
- 90 **Research on the Role of Physical Education in Kunming in Promoting the Development of Youth Sports in Southeast Asian Countries**
Yue Li, Nurul Nadiyah Binti Sahimi, Haohai Wang
- 96 **Research on the Effect of TABATA High-Efficiency Fat-Burning Training on Improving the Health of Obese College Students**
HehuaTang, Lei Zhang

Research on Strategies for Cultivating Critical Thinking in Chinese Reading Teaching of Middle Schools

Wen Zheng*

Chongqing Jiangbei District Teachers' College of Further Education, Chongqing 400025, China

**Author to whom correspondence should be addressed.*

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract:

This paper analyzes the current status of Chinese reading teaching in middle schools, pointing out such issues as the dominance of traditional teaching models, insufficient emphasis on cultivating critical thinking, and inadequate utilization of teaching resources. On this basis, the study expounds the significance of cultivating critical thinking for students' personal growth, the reform of Chinese teaching, and social development. Specific cultivation strategies are proposed, including creating contexts, designing questions, carrying out cooperative inquiry, encouraging questioning, and implementing multiple evaluations, which are illustrated with examples from teaching materials. The study shows that these strategies can effectively stimulate students' critical thinking and enhance their abilities of independent thinking and rational judgment.

Keywords:

Middle school Chinese
Reading teaching
Critical thinking
Teaching strategies

Online publication: April 26, 2025

1. Introduction

With the deepening of educational reform, the cultivation of critical thinking has become one of the important goals in Chinese reading teaching for middle schools. However, current teaching practices still face issues such as the dominance of traditional teaching models and insufficient thinking training, which restrict the development of students' independent thinking and innovative abilities. This paper aims to analyze the current situation and significance of cultivating critical thinking in middle school Chinese reading teaching, and propose practical

teaching strategies, hoping to provide references for improving students' thinking quality and Chinese literacy.

2. The importance of cultivating critical thinking in middle school Chinese reading teaching

2.1. Promoting students' personal growth and development

Cultivating critical thinking can effectively enhance students' independent thinking abilities. With the

development of society, increasing emphasis has been placed on the importance of an innovative spirit and practical ability. The New Curriculum Standards also explicitly state that “it is necessary to focus on cultivating students’ abilities to discover, explore, and solve problems.” Junior high school students are in a critical period of rapid growth, making the cultivation of their critical thinking particularly important during this stage. The teaching activities of the Chinese subject provide an excellent opportunity for students to exercise critical thinking. When encountering a text, instead of simply understanding its meaning as before, students should interpret it with their own subjective awareness and form their own ideas and opinions^[1]. For instance, after reading a text, teachers should guide students to grasp its moral implications, gain insights, and apply this understanding to the study of other subjects as well as future life and work. This helps them calmly analyze complex problems and make rational decisions when faced with challenges.

2.2. Promoting Chinese teaching reform and quality improvement

Introducing critical thinking into middle school Chinese reading teaching is one of the effective ways to change the current status of traditional Chinese subject education. Through conscious critical interpretation of textbook content, students will not only understand the ideological and cultural implications of texts from their literal meanings but also form and refine their unique insights. Cultivating students’ independent thinking ability and critical thinking helps improve their language expression ability and composition level. When evaluating various aspects of a text’s content and form, students need to express their ideas in written form, thereby exercising the accuracy and rigor of their language expression, and further promoting the comprehensive improvement of their Chinese comprehensive literacy.

2.3. Meeting the needs of social development for talents

The current era is an information-rich era, where everyone, including teachers, is faced with a vast amount of information every day. A person with critical thinking can distinguish which information is authentic and valuable, which is meaningless or untrue, and will

not be easily influenced by others’ opinions. However, junior high school students in China generally lack such literacy. Strengthening the cultivation of critical thinking in Chinese reading teaching is conducive to developing students’ good thinking patterns and cognitive habits. This enables them to maintain a calm attitude and make rational choices in future social life when faced with various complex information and diverse viewpoints, thus better adapting to the needs of social development.

3. Analysis of the Current Situation of Chinese Reading Teaching in Middle Schools

3.1. Dominance of traditional teaching models

At present, Chinese reading classes in some middle schools still remain in the stage of “cram-style teaching”, where teachers occupy most of the class time for lecturing, and students act as passive recipients of knowledge. Teaching content basically revolves around keywords, sentences, paragraphs in the text, and the main ideas of the article (i.e., the so-called “central theme”). Some teachers even focus their lesson preparation on how to find “standard answers” for the text and present these answers as teaching objectives for students to memorize or repeat. In this scenario, students have no opportunity to independently develop their own thinking, raise questions, or attempt to solve problems. They cannot cultivate innovative awareness, capabilities, or active participation skills, making it difficult to form critical thinking.

3.2. Insufficient attention to cultivating critical thinking

Some teachers lack a correct understanding of critical thinking and have deviations in their comprehension of it. When formulating teaching plans, they do not incorporate the cultivation of students’ critical thinking abilities. Moreover, most teachers focus primarily on improving students’ academic performance, prioritizing the instruction of test-taking strategies and methods for answering reading questions over cultivating students’ thinking abilities and patterns. Meanwhile, in daily teaching activities, teachers do not allow students to raise questions or make their own judgments and interpretations of the texts they read, which seriously

hinders the development of students' independent thinking and innovative spirit. For example, when teaching modern Chinese texts, teachers often guide students to analyze the text's expressive techniques and rhetorical devices according to fixed answering patterns. Students only need to apply the teacher's methods mechanically, without the need for independent thinking or judgment.

3.3. Inadequate utilization of teaching resources

First, there is a wealth of materials in textbooks that can be used for critical thinking training and education. However, in actual teaching practice, not all teachers can effectively utilize these materials to cultivate such abilities in students. Second, some teachers only understand the textbook content superficially, mechanically copying the textbook materials while ignoring the conflicts and debates between various viewpoints contained therein or questions that allow for discussion, thus missing opportunities to educate students in critical thinking. Finally, due to the limited classroom teaching time, some teachers are only confined to the in-class teaching content and are not good at introducing relevant extracurricular learning materials into the classroom, thereby limiting students' learning scope.

4. Strategies for cultivating critical thinking in the Chinese reading teaching of middle schools

4.1. Creating contexts to stimulate critical thinking

First, in the teaching process, creating authentic and infectious contexts can mobilize students' enthusiasm and initiative, putting them in an active state that is conducive to cultivating their critical thinking abilities. Second, teachers can adopt various methods (such as using multimedia technology) to create contexts based on the content of the selected texts.

Taking *The Emperor's New Clothes* from the seventh-grade (Volume 1) of the unified junior high school Chinese textbook as an example, students can watch a short animated video adapted from the story via multimedia. Two questions can be posed: "In real life, are there people as ignorant and ridiculous as the emperor and his ministers in the story? If you were there when

the child told the truth, what would you do?" By setting up such a context that connects the textbook content with real life, students are inspired to make their own judgments or evaluations about the content mentioned in the article. Additionally, this allows students to consider issues from multiple perspectives, thereby exercising their critical thinking abilities.

4.2. Designing questions to guide critical thinking

Teaching is a two-way interactive process between teachers and students, aiming to jointly construct knowledge, and questioning serves as the core teaching strategy to achieve this. An excellent classroom allows students sufficient time to discuss topics that concern them and encourages in-depth exploration around these topics. Therefore, in reading teaching, scientifically designing and effectively utilizing questions to organize classroom instruction is of paramount importance.

When studying *The Sight of Father's Back* from the eighth-grade (Volume 1) of the unified junior high school Chinese textbook, questions like the following can be posed: "Why does the sight of the father's back move 'me' deeply? Some argue that the description of the father climbing over the platform to buy oranges for his son in the last four paragraphs violates the social norms of that time. What is your opinion on this?" Through a step-by-step question design, students are guided to transition from surface-level understanding to critical thinking, deepening discussions around the core topic^[2]. These questions require students to not only grasp the emotional implications of the text but also conduct rational reflection and evaluation based on their own life experiences, thus breaking away from simplistic thinking patterns and cultivating critical thinking habits. By exploring these open-ended questions, students are prompted to reexamine classic texts, fostering their abilities in independent thinking and critical analysis. Only when questions truly serve as a bridge for dialogue between teachers and students can reading classes shift from "teacher-dominated" to "student-centered", ultimately achieving the teaching goal of cultivating students' higher-order thinking skills.

4.3. Conducting cooperative inquiry to deepen critical thinking

The learning approach of cooperative inquiry enables students to exchange ideas, broaden their thinking through the collision of thoughts, cultivate critical thinking patterns, and enhance their critical thinking levels. Therefore, teachers can select appropriate content from the unified textbooks to guide students in group cooperative inquiry learning^[3].

Taking Hometown from the ninth-grade (Volume 1) of the unified junior high school Chinese textbook as an example, teachers can organize students into groups to discuss and debate questions such as “Is Runtu’s transformation solely due to individual reasons? Are there any other social factors influencing him?” and “What is the realistic significance of the character Mrs. Yang?” Within the groups, members can question each other, supplement, and refine their own ideas based on their classmates’ viewpoints. Subsequently, the whole class can express opinions on a specific issue and reach a conclusion. On one hand, this ensures that every student participates in classroom learning activities; on the other hand, it stimulates students’ enthusiasm, encouraging them to think actively, bravely express different opinions, and exercise their language organization, oral expression, and logical reasoning abilities. Moreover, during the process of cooperative learning, students can learn from each other’s strengths and make progress together.

4.4. Encouraging questioning to foster a critical spirit

Questioning is an important manifestation of critical awareness. Therefore, in the process of reading teaching, attention should be paid to cultivating students’ spirit of doubt. Additionally, it is essential to create a democratic and equal teaching environment in the classroom, enabling students to develop the learning habits of asking questions bravely and skillfully. This not only requires teachers to transform traditional cramming teaching concepts but also to stimulate students’ critical thinking by establishing a democratic and equal classroom atmosphere.

For example, when studying Anecdotes of Mr. Ye Shengtao from the seventh-grade (Volume 2) of the unified junior high school Chinese textbook, a student

asked, “Why is Mr. Ye depicted so perfectly in the article? Are there really such flawless people in reality?” When faced with such questions, teachers should not dismiss or deny students’ ideas. Instead, they should affirm and praise the students, encourage them to find relevant materials to support their viewpoints, or invite other students to express their opinions, and then jointly discuss and reach a conclusion with the students, thus cultivating students’ independent thinking ability and innovative consciousness. Teachers should guide students to conduct in-depth exploration of these questions, enabling them to learn to analyze texts with rational thinking and not blindly accept the author’s viewpoints, thereby cultivating critical thinking. It should be noted that during the process of cultivating students’ questioning spirit, teachers need to protect students’ enthusiasm for knowledge while guiding them to master scientific questioning methods in a timely manner, so that questioning can truly become an effective tool for deepening thinking.

4.5. Multiple evaluations to promote the development of critical thinking

In traditional Chinese reading teaching, the assessment of students is mainly carried out through tests. This model primarily focuses on examining the extent of students’ knowledge acquisition while neglecting the evaluation and feedback of students’ thinking activities and thinking qualities. Therefore, to cultivate students’ good critical thinking habits, teachers need to construct a diversified and dynamic classroom teaching evaluation mechanism from multiple perspectives and all aspects. This involves incorporating attention to students’ thinking levels and development status into daily teaching activities and emphasizing the reflection of individual differences and uniqueness^[4]. When evaluating students’ reading learning, teachers can consider the following aspects.

Firstly, whether students have the ability to think independently and can put forward unique insights can be regarded as one of the evaluation criteria. Secondly, the ability to capture key information, integrate it, and form new viewpoints can serve as the second criterion. Thirdly, the extent to which students have a thorough understanding of the learned content and can express it clearly and fluently in language can be the third measure. Finally, evaluation can also be based on whether students

are good at listening to others' opinions and actively expressing their own views during the problem-solving process. This allows students to reflect on their own thinking processes during the evaluation, learn from others' strengths, and promote the development of critical thinking.

5. Conclusion

Cultivating critical thinking in middle school Chinese reading teaching is a crucial link to enhance students' Chinese literacy and thinking quality. Through strategies

such as creating contexts, designing questions, carrying out cooperative inquiry, encouraging questioning, and implementing multiple evaluations, combined with specific texts in the unified middle school textbooks, educators can effectively stimulate students' critical thinking and cultivate their abilities of independent thinking, rational judgment, and questioning innovation. In future middle school Chinese reading teaching, teachers should fully recognize the importance of critical thinking cultivation, continuously explore and innovate teaching methods, and lay a solid foundation for students' comprehensive development.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Li GM, 2025, Research on Strategies for Cultivating Critical Thinking in Junior High School Chinese Reading Teaching. *Gansu Education Research*, 2025(3): 128–130.
- [2] Cao HG, 2021, Analysis of Strategies for Cultivating Critical Thinking in Junior High School Chinese Reading Teaching. *Bulletin of Chinese Language Teaching Journal (Academic Journal)*, 2021(4): 51–52.
- [3] Ran YH, 2022, A Reference Guide for Cultivating Students' Critical Thinking Ability in Middle School Chinese Teaching—Review of *Case Studies on Critical Thinking Teaching in Middle School Chinese*. *Chinese Language Construction*, 2022(1): 88.
- [4] Ma XG, 2020, The Application of Critical Thinking in Chinese Reading Teaching—Review of *Critical Thinking and Middle School Chinese Reading Teaching*. *Chinese Language Construction*, 2020(17): 81.

Publisher's note

Whoice Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

A Review of the Intergenerational Changes in the Work Values of the New Generation of Employees

Yaqi Zhang*

School of Educational Science, Liaocheng University, Liaocheng 252059, China

**Author to whom correspondence should be addressed.*

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract:

The new generation of employees refers to those who were born after 1990 and have already started working. Work values are the goals related to work that individuals pursue, expressing their inner needs and the work traits they pursue when engaging in activities. This article elaborates on the previous research process from four aspects: the concept of new-generation employees, the concept of work values, the intergenerational changes of work values, and the theoretical basis of the intergenerational changes of work values. The article also presents views on the future research directions of the intergenerational changes in work values of new-generation employees.

Keywords:

New-generation employees
Work values
Intergenerational change

Online publication: April 26, 2025

1. Introduction

In recent years, the world has entered a new era of unprecedented changes. The significant social transformation also includes changes in the labor force^[1]. The composition of the workforce in the workplace is increasingly diverse, with diversity, equality, and inclusiveness becoming core issues for organizations^[2-3]. By the end of 2020, 90s-born employees accounted for 17.4%, 80s-born employees for 25.9%, 70s-born employees for 24.5%, and 60s-born employees for 20.9% of the employed population in China^[4]. Although employees of different generations bring vitality and competitive advantages to organizations, their differences in values and behavioral patterns are becoming increasingly prominent. If not managed properly,

these differences may lead to misunderstandings and conflicts. Since the core of generational issues lies in social and cultural changes, and values are an important manifestation of such changes, understanding the intergenerational changes in work values is the foundation for effectively addressing generational issues in the workplace^[5].

2. Literature review

2.1. The concept of the new generation of employees

With the development and progress of society, the new generation of employees has entered the workplace and is

gradually becoming the main force in the labor market and an indispensable part of enterprises. Abroad, researchers refer to the new generation of employees as “Generation Y”, referring to those born after 1980 and already in the workforce. McCrindle defined “Generation Y” as those born between 1982 and 2000^[6]. Stephanie defined the new generation of employees as those born between 1980 and 2000 and currently aged 20 to 30^[7]. Crampton and Hodge consider those born between 1980 and 1999 as the most educated, well-traveled, and technologically advanced generation in history^[8]. They grew up in a world of computers, the Internet, CDs, and mobile phones, but this group seems to pay less attention to the process or the outcome. In China, scholar Liu Yuxin pointed out in his research that the new generation of employees is those born after 1980 and engaged in non-agricultural work outside their hometowns^[9]. Li Jun believes that the new generation of employees is the young labor force born after 1980 in the current environment of rapid information and economic progress^[10]. Yao defined the new generation of employees as those born after 1980 and working in non-agricultural industries^[11].

Hui, after considering factors such as age, occupation, and culture, defined post-90s employees as the new generation of employees^[12]. Li Yanping and Hou Xuanfang believe that the new generation of employees is those born in the 1980s and 1990s, who pursue a happy, free, and equal working environment^[13]. With the development of the times, more and more new generation employees have entered the workplace. However, due to different research perspectives, scholars have not yet given a unified concept definition of the new generation of employees. This study, based on previous research and current actual conditions, defines the new generation of employees as young people who have entered the workplace and were born after 1980.

2.2. The concept of work values

Work values can also be called professional values. Through the retrieval of relevant literature, it is found that there is no unified standard for the definition of work values in the academic circle at present. Scholars give different interpretations according to their different research objects and purposes.

The foreign scholar Super defined work values as

work goals, the attributes or qualities that people “seek in the activities they engage in”, and also a manifestation of an individual’s internal needs in his research^[14]. Elizur argued in his research that work values refer to the degree to which an individual attaches importance to a certain outcome obtained in the working environment^[15]. Knoop holds that work values refer to the degree of value, importance, and desirability of what happens at work^[16]. Froese simplified the definition of work values and divided them into two different categories: general values related to the work environment and work centrism^[17]. General values have broad meanings and are related not only to the business environment but also to the more general environment. For example, individualism is the degree to which people are individualistic or group-oriented. Work centrality refers to an individual’s perception of the significance or value of work as a major aspect of life, as well as how an individual compares the importance of work with other areas of life, such as family, leisure, community, and religion.

Domestic researchers Yu Hua and Huang Xiting hold that work values are the internal criteria for measuring a person’s status in a specific industry^[18]. This is an individual’s belief in their profession, and also a sufficient basis for a career choice and efforts to achieve their work goals. Jin Shenghua and Li Xue regarded work values as a way for individuals to evaluate and choose their work, and classified work values into purposeful work values and means work values^[19]. Among them, the former is the internal motivation standard for individuals to evaluate and choose their jobs, while the latter is the external rule of rules when individuals evaluate their jobs and choose careers. Horna and Li Chaoping hold that work values are a kind of choice and evaluation that transcends specific environments and guides individuals in what they do and take actions at work^[20]. The differences in individuals’ work values will affect their needs and preferences for work. Hongkesen, through the research on the new generation of employees, defined work values as the overall evaluation and attitude tendency of workers towards the work they do in the organization they are in^[21]. It is also an individual’s cognition of work principles, ethics, and beliefs, which has a significant impact on their own behavior. Work values include three dimensions: attitude tendency, internal needs, and professional ethics. Attitude

tendency refers to the fact that the work an individual does should meet their specific attitude cognition. Intrinsic needs refer to what employees are engaged in.

The job should be able to meet one's basic needs. Professional ethics refer to the fact that the work carried out by employees adheres to morality, and the work they undertake should have good social norms. Zhang Jianren and Luo Yiran et al. pointed out that work values are an internal measurement standard for the quality and importance of the work an individual engages in in society^[22]. Work values also refer to the judgment criteria for the work quality or work characteristics that an individual seeks in their work.

2.3. Dimensions and measurement of work values

After sorting out the existing research, it was found that different scholars do not have the same focus on the dimension division of work values. Foreign scholars, Super et al., were the first to divide the dimension of work values into external value, internal value, and added value^[23]. Manhardt et al. hold that work values are divided into three dimensions: sense of security and comfort, growth and autonomy, and independence^[24]. Taylor and Thompson divided work values into five dimensions: external motivation, self-expression, internal motivation, competence, and sense of security^[25]. Elizur et al. divided work values into three dimensions: instrumental, cognitive, and emotional^[26]. Ros et al. divided work values into four dimensions: intrinsic value, extrinsic value, social value, and prestige value^[27]. Based on the research of foreign scholars on work values, Chinese scholars have also conducted research and analysis on the dimension division of work values on the basis of being suitable for China's national conditions. Chinese scholar Yuan Zhihuang divided work values into seven dimensions: mood orientation, social orientation, leadership orientation, self-expression orientation, economic orientation, doing good orientation, and self-treatment orientation^[28]. Jin Shenghua et al. divided work values into two dimensions: instrumental and purposeful^[29]. Wang Fang et al. divided work values into three dimensions: comfort and safety, ability and growth, and status and independence. Li Yanping et al. divided work values into four dimensions: self-emotion, material environment,

interpersonal relationship, and innovation characteristics. Yang Xue divided work values into five dimensions: internal needs, external rewards, self-actualization, interpersonal support, and growth and development. By classifying the dimensions of work values by scholars at home and abroad, it can be found that the classification of the dimensions of work values can roughly be divided into the two-part method, the three-part method, the four-part method, and the multi-factor method. The first one is the dichotomy. Rokeach divided work values into two categories: instrumental and purposeful. Among them, instrumental is related to an individual's action pattern, while purposeful is related to an individual's goals and pursuits. According to Rokeach's theory, many scholars in China divide work values into two types: tool-type and goal-type. Wang Conggui divides work values into two types: one is the work goal-type and the other is the work method-type. The specific meanings of these two values are relatively similar to Rokeach's. Among them, the focus of instrumental values is an individual's attitude and intensity at work, while the focus of purposeful values is an individual's pursuit of the ultimate state, such as self-actualization and etc. The second one is the rule of thirds. The three viewpoints start from the two viewpoints, expand on them, and conduct more discussions on the social values involved. Super divided work values into three levels: internal compensation value, external compensation value, and external attached value. Meyer et al. divided work values into three levels: comfort, strength and development, and importance and autonomy. Wang Fang and Xu Yan, based on Meyer's theory, conducted a survey of the new generation of employees in major companies in China and concluded the work values in three aspects: comfort and safety, ability and progress, and status and independence. The third one is the quarter method. In the continuous exploration of work values, the classification of work values has gradually been refined. Ros and Schwartz divide work values into four levels: internal value, external value, social value, and honor value. Li Yanping and Hou Xuanfang of the country, through a survey of the new generation of employees, divided their work values into four aspects: self-emotion, material environment, interpersonal relationship, and innovation characteristics. The fourth one is the multi-factor method. Taylor et al. divided the composition of

work values into five parts: safe environment, internal motivation, external motivation, self-disclosure, and job achievement. Gu Xueying divided work values into 11 dimensions, namely interaction, righteousness, profit, and challenge. From the above research, it can be found that different researchers have different focuses on the dimension division of work values. They divide work values into dichotomy, tripartitomy, quadrilateral division, and multi-factor division. However, the division dimensions of most researchers can be included in both internal value and external value levels as part of individual values. Work values are not only determined by the background of the time they are in, but also gradually change along with the development of time. Therefore, there are significant differences in work values in different eras. The working environment of post-90s professionals has undergone tremendous changes compared to the older generation. The applicable scope of the traditional work value dimension has been challenged, while the construction of the new work value dimension needs to take into account both the changes of time and the differences of regions and ethnic groups. In view of this, drawing on the proposal made by Hou Xuanfang et al., in the context of China, the work values of the new generation of employees were classified in dimensions, including “utilitarian orientation”, “intrinsic preference”, “harmonious interpersonal relationship”, “innovative consciousness”, “future development”, etc.

2.4. Research on the intergenerational changes of work values

Work values are the work-related goals pursued by individuals, expressing their inner needs and the work characteristics they pursue when engaging in activities. Work values have the function of motivation, which can stimulate and maintain an individual's attitude in the workplace (such as employees' job satisfaction, job engagement and turnover tendency) and behaviors (such as in-role performance, out-of-role performance and innovation performance of employees), therefore, job values are important variables in the field of organizational management research. At present, most studies at home and abroad suggest that there are significant differences in the work values of employees of different generations. Compared with the Baby Boom

generation (born between 1946 and 1964) and Generation X (born between 1965 and 1980), Generation Y (born after 1981) pays more attention to leisure and family balance, values work autonomy, and model authority more. Have a greater desire for challenging work and study opportunities. Furthermore, there are also studies indicating that the changes in work values are not entirely linear. For instance, Twenge et al. demonstrated that Generation X places more emphasis on the material rewards of work than the other two generations. However, some studies on intergenerational differences in work values have revealed conclusions that contradict previous studies. For instance, Cook found that there was no significant difference in the degree of emphasis on work autonomy among different generations. In addition, some studies have found that there are some differences in the intergenerational characteristics and changing trends of work values among employees in different countries. For example, Egri and Ralston discovered that the values of employees of different generations in China are significantly different from those of employees in the United States, and this difference is widespread among all generations.

2.5. The theoretical basis for the intergenerational changes in work values

The socialization theory holds that an individual's intrinsic value depends on the socialization they experience during their growth process, reflecting one aspect of the overall socio-economic conditions in a specific historical period. Most studies on values have shown that after an individual forms certain values through their growth process, this psychological trait remains relatively stable throughout their life course. However, some researchers currently believe that a person's growth is a lifelong process, and their personality status and values are not solely determined by childhood. In some cases, the social environment may undergo significant changes, which may, to some extent, alter an individual's value status. However, once the social environment returns to stability and no longer undergoes drastic changes, an individual's values will also re-enter the structural state before the changes.

The scarcity theory holds that an individual's values are mainly a response of the individual to the scarcity

factors experienced during their growth process, which include economic factors and social factors, etc. If a certain generation grew up in turbulent times, such as experiencing wars, severe economic recessions, etc., then what they experienced was a kind of deficient economic society environment will prompt them to form the so-called modernist values, which focus on survival, attach particular importance to the material conditions that can determine the survival situation, believe in economic determinism, uphold rationalism and materialism, and respect authority, etc. When a certain generation grows up in a relatively safe economic and social environment, they will form a postmodernist value view. This value orientation mainly prefers egalitarianism, mutual trust and mutual benefit, diversity, inclusiveness, appreciation of individual value, self-transcendence, etc. It is precisely because of the lack of material resources in their growth experiences that people do not overly emphasize and pursue material things, but rather attach more importance to spiritual pursuits, including the expression of self-opinions, the realization of self-worth, a sense of achievement, etc. What they stress is happiness rather than survival.

Work values have undergone an overall shift along with the changes of the times and the economic and social environment. This is actually a microcosm of the unique and overall characteristics presented by each generation in society. It is precisely because of these distinctive features that cover an entire group of an entire era that we refer to

each group as a generation.

3. Summary

From the review and sorting out of previous studies, it can be seen that although the intergenerational research on current work values has made considerable progress, there are still some deficiencies. Firstly, the formation of intergenerational groups is influenced by social and cultural environmental factors. However, in previous studies on intergenerational values in China, some adopted the Western intergenerational style, while others adopted the “generation in ten years” approach, failing to fully integrate major events in China’s social and historical development with intergenerational divisions. Finally, the vast majority of studies rely on a single cross-sectional research design and cannot effectively distinguish between the cohort effect (that is, the influence of a series of historical events in the past on the same generation) and the age effect. The robustness values of the research results, namely the impact of personal age changes and the period effect (that is, the impact of current social environment changes on all generations), are questionable. The insufficiency of theoretical research and the demands of practice reflect that the research on the intergenerational differences in work values in the Chinese context needs to be further supplemented and improved to better reflect the impact of social changes in the era of great transformation on the labor force.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Knoop R, 2016, Achievement of Work Values and Participative Decision-Making. *Psychological Reports*, 68(3): 775–781.
- [2] Anderson H, Baur JE, Griffith JA, et al., 2017, What Works for You May not Work for (Gen)Me: Limitations of Present Leadership Theories for the New Generation. *Leadership Quarterly*, 28(1): 245–260.
- [3] Crampton SM, Hodge JW, 2019, Generation Y: Uncharted Territory. *Journal of Business & Economics Research (JBER)*, 7(4): 1–6.
- [4] Li Y, Gong Y, Burmeister A, et al., 2021, Leveraging Age Diversity for Organizational Performance: An Intellectual Capital Perspective. *Journal of Applied Psychology*, 106(1): 71–91.

-
- [5] Cook J, Wall T, 2018, New Work Attitude Measures of Trust, Organizational Commitment and Personal Need Non-Fulfilment. *Journal of Occupational Psychology*, 53(1): 39–52.
 - [6] Elizur D, 2017, Facets of Work Values: A Structural Analysis of Work Outcomes. *Journal of Applied Psychology*, 69(3): 379.
 - [7] Egri CP, Ralston DA, 2018, Generation Cohorts and Personal Values: A Comparison of China and the United States. *Organization Science*, 15(2): 210–220.
 - [8] Froese FJ, 2015, Work Values of the Next Generation of Business Leaders in Shanghai, Tokyo, and Seoul. *Asia Pacific Journal of Management*, 30(1): 297–315.
 - [9] Lee ES, Park TY, Koo B, 2022, Identifying Organizational Identification as a Basis for Attitudes and Behaviors: A Meta-Analytic Review. *Psychological Bulletin*, 141(5): 1049.
 - [10] McCrindle M, 2003, Understanding Generation Y. *Principal Matters*, 2003(55): 28–31.
 - [11] Rokeach M, 1973, *The Nature of Human Values*. Free Press, California.
 - [12] Chung MS, 2015, Knowing Generation Y: A New Generation of Nurses in Practice. *British Journal of Nursing*, 22(20): 1173–1179.
 - [13] Super DE, 1970, *Work Values Inventory Manual*. Houghton Mifflin Company, Boston.
 - [14] Taylor RN, Thompson M, 1976, Work Value Systems of Young Workers. *The Academy of Management Journal*, 19(4): 522–536.
 - [15] Twenge JM, 2016, A Review of the Empirical Evidence on Generational Differences in Work Attitudes. *Journal of Business and Psychology*, 25(2): 201–210.
 - [16] Chen J, Lian R, 2011, Review of Research on the Development of Intergenerational Work Values. *Advances in Psychology*, 19(11): 1692–1701.
 - [17] Huo N, Li CP, 2009, Research Progress and Prospect of Work Values. *Advances in Psychological Science*, 17(4): 795–801.
 - [18] Hong KS, 2012, Research on the Mechanism of Work Values and Organizational Identity of the New Generation of Employees on Their Output, thesis, Wuhan University.
 - [19] Liu YX, Zhang JW, Zhang XC, et al., 2013, The Generation Mechanism of Suicidal Ideation among the New Generation of Employees. *Advances in Psychology*, 21(7): 1150–1161.
 - [20] Li J, Liu X, 2013, Analysis of the Growth Environment and Characteristics of New-Generation Employees. *Huxiang Forum*, 26(6): 43–47.
 - [21] Li YP, Hou XF, 2012, The Structure of Work Values of the New Generation of Employees and Its Influence Mechanism on Work Behavior. *Economic Management*, 34(5): 77–86.
 - [22] Meng XL, Chai PF, Huang ZW, 2020, Work Values, Organizational Equity and Turnover Tendency and Their Intergenerational Differences. *Scientific Research Management*, 41(6): 219–227.
 - [23] Taylor RN, Thompson M, 1976, Work Value Systems of Young Workers. *The Academy of Management Journal*, 19(4): 522–536.
 - [24] Yao H, Liang JQ, 2017, Research on the Composition of Work Values of the New Generation of Employees and Its Impact on the Intention to Stay. *Human Resources Development in China*, 2017(4): 39–46 + 65.
 - [25] Yu H, Huang XT, 2000, A Comparative Study on the Professional Values of College Students and Employees of Mainland Enterprises. *Psychology*, 2000(6): 739–740.
 - [26] Twenge JM, 2016, A Review of the Empirical Evidence on Generational Differences in Work Attitudes. *Journal of Business and Psychology*, 25(2): 201–210.
 - [27] National Bureau of Statistics of the People's Republic of China, 2014, *China Statistical Yearbook 2014*. China Statistics Press, Beijing.

- [28] Zhang JR, Luo YR, Ling H, et al., 2020, Research on Work Values of Intergenerational and Career Development Based on Questionnaire Method. *Chinese Journal of Clinical Psychology*, 28(3): 600–604.
- [29] Liu YX, Zhang JW, Zhang XC, et al., 2013, The Generation Mechanism of Suicidal Ideation among the New Generation of Employees. *Advances in Psychology*, 21(7): 1150–1161.

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

The Construction of “Learning-Practice-Match-Assessment” Integration Mode in Soccer Teaching

Peiru Li*

Chongqing College of International Business and Economics, Chongqing 401520, China

**Author to whom correspondence should be addressed.*

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract:

This paper focuses on the construction of “Learning-Practice-Match-Assessment” integration mode in soccer teaching, and the objective of the research is to grasp the problems in the construction of this mode and explore the strategies for the construction of the mode. Under the application of the two methods of teaching observation and logical analysis, it is necessary to first elaborate the connotation of “learning-practice-match-evaluation” integrated mode, analyze the key elements and affirm its value. On this basis, the common problems in the construction of the model are identified, and the problems of low autonomy of students’ learning and insufficient guidance of soccer training are interpreted in detail. Combined with the performance of the problems, it proposes the strategies of independent learning to stimulate students’ interest in learning. Strategies such as efficient training and hierarchical training guidance are aimed at providing certain references for the construction of related models and high-quality football teaching.

Keywords:

Soccer teaching
“Learning-practice-match-evaluation”
integration
Training guidance

Online publication: April 26, 2025

1. Introduction

Soccer is the most popular sport in the world. In recent years, the degree of attention to soccer in schools has been increasing, the soccer teaching environment is better, and the quality of soccer teaching in most schools has been improved compared with the past. In recent years, the construction of “learning-practice-match-evaluation” integration mode has received much attention. It is more desirable to teach soccer based on this mode, and some

schools have made more attempts in the construction of this mode^[1]. However, further observation, comparison and analysis can be found that the construction of the relevant model needs to take into account different points, and at the same time will be affected by many factors. For this reason, it is necessary to explore the construction strategy of “learning-practice-match-evaluation” integration mode in the new era of soccer teaching.

2. Overview of the construction of the “learning-practice-match-evaluation” integrated mode in soccer teaching

2.1. Connotation of the integrated model

The construction of the integrated mode of “learning-practice-match-evaluation” in soccer teaching refers to the systematic arrangement for soccer teaching based on the close integration of students’ “learning”, “practice”, “match” and “evaluation” in the teaching of soccer [2]. Students’ learning encompasses both the acquisition of soccer knowledge and skills and the development of effective learning habits. Practice refers to the structured organization and execution of soccer-related training activities. Match involves the planning, development, and implementation of games, using competition both as a training tool and a means to enhance learning. Evaluation is the systematic assessment of soccer instruction, serving as a key method for understanding and improving the effectiveness of teaching. Different from the traditional teaching mode, “learning-practice-match-evaluation” integrated mode advocates the combination of theoretical teaching and practical teaching together, and at the same time attach importance to the teaching role of soccer training, soccer games. The construction and operation of this model will have many effects on soccer teaching, and the construction of the relevant model naturally has rich connotation [3].

2.2. The key elements of the integrated model construction

The construction of the integrated model of “learning-practice-match-evaluation” in soccer teaching is not simply a matter of integrating “learning”, “practice”, “match”, and “evaluation” together. The key elements that need to be taken into account are more diverse. In the “learning” level, change passive learning to active “learning”, advocating efficient and happy learning is the key issue [4]. At the level of “practice”, the combination of “learning” and “use” of soccer skills is the key issue, and it is also the most basic form of practical teaching. At the level of “match”, the key point is to play the role of training through matches and promoting learning through matches. At the level of “evaluation”, making full use of the evaluation results based on good teaching evaluation is the key issue. Organizing effective “practice” based on

students’ “learning”, better influencing “learning” and “practice” based on “competition”, and systematically conducting “evaluation” are the underlying logics in the construction of the integrated model of “learning-practice-competition-evaluation” in soccer teaching. For schools and teachers, they should also fully consider the key factors to build a new soccer teaching model [5].

2.3. The specific value of the integrated model

The reason why advocating the construction of “learning-practice-match-evaluation” integration mode in soccer teaching is closely related to its important value. In a nutshell, its specific value is mainly reflected in the two levels of teacher “teaching” and student “learning” [6]. From the perspective of the teacher’s “teaching”, various sports training, competitions, and so on greatly enhance the level of soccer teaching. Teaching during training and conducting high-quality training in combination with competitions will make football teaching more systematic and comprehensive. After continuous innovation to meet students’ learning needs, the innovativeness of football teaching can also be further enhanced. The effectiveness of soccer teaching can be further enhanced as its content becomes richer and its instructional methods more innovative. From the perspective of students’ learning, the construction of the integrated mode of “learning-practice-match-evaluation” can closely combine the “learning” and “use” of soccer knowledge. This is a great help to deepen the understanding of soccer and to cultivate and improve the students’ soccer ability. For this reason, schools and teachers should explore more in the construction of the integrated mode of “learning-practice-match-evaluation”.

3. Problems in the construction of the integrated model of “learning-practice-match-evaluation” in soccer teaching

3.1. The low autonomy of students’ learning

An analysis of soccer teaching in some schools reveals that certain students have developed a habit of passive learning. In the construction of the integrated model of “learning-practice-match-evaluation”, many teachers still take “teaching” as the leading role, and do not pay much attention to highlighting the students’ subjective status. In this case, the students’ autonomy in soccer knowledge

learning and skill learning is low, and their initiative to participate in soccer training and competition is relatively low. More seriously, the traditional teaching method is used for a long time because it does not pay attention to the cultivation of students' autonomy in "learning". When teachers deliver soccer instruction in a mechanical manner and conduct training without engagement or flexibility, the overall appeal of the teaching to students tends to remain low. In a certain sense, when soccer teaching is not interesting enough and it is difficult to effectively cultivate students' autonomy in the level of "learning", the effective construction of the integrated mode of "learning-practice-match-evaluation" will be very difficult ^[7].

3.2. Insufficient guidance for soccer training

In the "learning-practice-match-evaluation" integrated model construction, soccer training is an important medium for practicing the "learning" and "use" of soccer knowledge. The importance of soccer training in the construction of the relevant model is self-evident, but the soccer training level in the construction of this model often lacks effective guidance ^[8]. For example, some teachers did not do a good job of careful observation when organizing student training, and the lack of observation in the early stage makes it difficult to fully grasp the students' sports foundation and differences in athletic ability. In such cases, the design of training content and the arrangement of training tasks often lack relevance and coherence. Some teachers also require students to conduct mechanical training attempts after assigning training tasks. During this process, the participation of teachers is relatively low, and naturally, they are unable to guide students in combination with the individual performance differences of students. Due to the lack of effective guidance, training in soccer teaching can easily become a formality, and the lack of training is not conducive to students achieving good results in soccer games. This shows that the lack of training guidance is also a basic problem in the construction of the relevant model.

3.3. The single form of soccer matches

The role of the soccer game is reflected in the two aspects: training through matches and promoting learning

through matches, and "game" is also the core link in the integrated mode of "learning-practice-match-evaluation". Although some schools have invested considerable effort in developing the integrated "learning-practice-match-evaluation" model, the format of soccer matches remains relatively limited. For example, many schools only organize small-scale soccer matches within the school, and it is difficult for students to play soccer matches with students from other schools. The influence of small-scale soccer matches is limited and the number of participants is small, which is not conducive to students' learning and growth in the matches. Not only that, the lack of professionalism in the soccer matches organized by some schools and the single format of the matches also led to the low motivation of some students in participating in the matches. Even if specific tournaments are organized and carried out, the influence of soccer matches is limited, and it is difficult to give full play to the role of soccer matches as a substitute for training and promotion of teaching in the integrated mode of "learning-practice-match-evaluation" ^[9].

3.4. Lack of comprehensiveness in teaching evaluation

In the construction of the integrated model of "learning-practice-match-evaluation" in soccer teaching, the role of teaching evaluation is to help teachers grasp the teaching situation, which can also reflect the application of teaching methods and the performance of different students in soccer. However, the role of teaching evaluation needs to be played on the premise of accurate and effective evaluation. Through observation, it can be found that the problem of insufficient comprehensiveness of teaching evaluation is likely to occur in the construction of the integrated mode of "learning-practice-match-evaluation". For example, in some schools, teachers serve as the sole evaluators in soccer teaching, with minimal student involvement in the evaluation process, resulting in certain limitations in the effectiveness of teaching assessment. The result-oriented evaluation is also limited when evaluating, for example, the final training results and match results are overly emphasized. Under the influence of this problem, it is difficult for the evaluation results to fully reflect the students' soccer knowledge learning, training, and game performance, and the subsequent

teaching adjustment and optimization will also lack effective reference.

4. The specific strategies for the construction of “learning-practice-match-evaluation” integration mode in soccer teaching

4.1. Independent learning to stimulate students’ interest in learning

Soccer teaching “learning-practice-match-evaluation” integration mode should first drive students to learn on their own. Adjustments in teaching, training, and related areas can help stimulate students’ interest and encourage independent learning driven by their intrinsic motivation. For example, teachers can organize “relay with the ball” and “catch the pass shot” and other game activities. In these game activities, technical activities such as passing the ball with one foot, quickly passing after stopping the ball, receiving through balls, and shooting from crosses can be embedded. While embedding soccer techniques and tactics in the game, students should be guided to train independently around specific techniques and tactics. Teachers can also set up the side road passing tactics and a variety of free kick tactics in daily teaching tasks, based on technical and tactical cooperation with the task of driving students to learn independently. Personalized learning and training plans should be formulated for different students, thereby cultivating their autonomy in the learning of football knowledge and football training. After fully highlighting the students’ subjective position and actively guiding them to independent learning, the students’ higher interest in sports can also help them develop good learning and training habits, which naturally contributes to the construction and operation of the integrated mode of “learning-practice-match-evaluation”.

4.2. Efficient practice and training guidance at different levels

In the construction of the integrated model of “learning-practice-match-evaluation” in soccer teaching, it is necessary to organize students to carry out high-efficiency training, and based on high-efficiency training, provide targeted guidance to students to help them master more knowledge of soccer, so that students can

master more soccer sports technology and tactics ^[10]. For example, teachers should design shooting training tasks by incorporating variations in distance, angle, and shooting techniques. When assigning training tasks and organizing students to train, dynamic assessment and observation should be done well. Some students have poor shooting performance. In this regard, teachers can provide guidance to them by combining the point of contact with the ball and adjusting the shooting force. There are also some students whose shooting performance is good. The teacher provides guidance on mastering technical essentials, maintaining body balance, and adjusting posture during shooting. In soccer training, teachers’ instruction, students’ learning, and dynamic assessment based on differentiated guidance should be closely integrated. This approach helps students identify weaknesses in their technical and tactical application and make continuous improvements, ultimately enhancing their performance.

4.3. Practical matches, continuous innovation in the form of matches

Soccer matches can help teachers clarify the focus of soccer training to a certain extent, and at the same time, the preparation based on the matches can also point out the direction for soccer teaching. In constructing the “learning-practice-match-evaluation” integrated model, it is essential to organize high-quality games and encourage student participation in competitive inter-school matches, allowing soccer games to become a vital component of soccer teaching. For example, after organizing students to participate in inter-school competitions, teachers need to explain the technical points of the game formation change drills, high press tactical drills, etc. Meanwhile, the teacher organized the students to undergo specialized training, further refining the teaching and training content around the competition, enabling the students to have a correct attitude in knowledge learning, technical and tactical drills, and training. Schools can also organize intramural leagues and club competitions, offering a variety of awards to encourage student participation. Teachers should align game-based teaching and training with a focus on evaluating students’ performance during matches, enabling students to improve their soccer skills through continuous involvement in competitive activities.

4.4. Comprehensive evaluation and build a perfect evaluation system

Soccer teaching “learning-practice-match-evaluation” integrated model construction needs to build a perfect evaluation system, and strive to evaluate from multiple perspectives. From the perspective of teaching evaluation subject diversification, the school, teachers, and students should become the main body of the evaluation of soccer teaching. Schools should assess the development and implementation of teachers’ instructional programs. Teachers need to carefully select appropriate teaching methods and evaluate students’ learning of soccer knowledge, training outcomes, and game performance. Students should also be involved in evaluating teamwork, execution of technical and tactical drills, as well as their own training and match performance. In this process, teacher evaluation needs to be closely integrated with student evaluation. Teachers need to communicate with students in detail when they find that students’ daily learning and special training performance are insufficient, and provide personalized guidance in this process. When teachers find that students’ football performance is insufficient during the competition, they should provide targeted assistance based on the students’ positions in future teaching and training, and continuously optimize the subsequent teaching and training based on the evaluation results. By improving

the evaluation system and continuously optimizing it at the three levels of “learning”, “practice”, and “match” based on the evaluation results, the integrated model of “learning-practice-match-evaluation” can naturally be well constructed.

5. Conclusion

The study reveals that the construction of the integrated “learning-practice-match-evaluation” model in soccer teaching is rich in content and encompasses multiple key elements. Its value is reflected at both the teaching and learning levels. The value of the construction of the relevant model is also reflected in the two levels of “teaching” and “learning”. Although there are some problems in the construction of the model, they are not insurmountable. It is more important to combine independent learning, efficient practice, practical competition, and comprehensive evaluation together, which is of great help to the construction of the relevant model. Meanwhile, during the construction of the relevant models, it is also necessary to conduct phased reviews and analyze the operation status of the relevant models. In this way, the integrated model of “learning-practice-match-evaluation” is continuously optimized to ensure that its operation can better support football teaching.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Yang T, Liu Y, Chen L, et al, 2020, Characterization of Running Analysis and Construction of Evaluation Standard for College Soccer Players. *Shandong Sports Science and Technology*, 42(4): 64–69.
- [2] Zhao X, Han S, 2024, Exploring, Practicing, Harvesting: The Process Evaluation of Soccer Teaching. *Physical Education*, 44(3): 80–83.
- [3] Zhang Y, 2024, The Practical Use of Process Evaluation and Summative Evaluation in High School Soccer Classroom Teaching. *Physical Education*, 44(3): 77–79.
- [4] Zhang J, 2023, Research on the Design of Performance Evaluation Units for Promoting Deep Learning: Taking “Football Dribbling” Teaching as an Example. *Physical Education*, 43(4): 46–49.
- [5] Yi Z, Mo Y, Ma Q, et al, 2023, Negotiated Evaluation of the Learning Effect of “Learning-Practice-Match-Evaluation” Soccer Teaching Model. *Sports Illustrated*, 2023(13): 41–43.

- [6] Zhang L, 2023, Evaluation Strategy of Classroom Teaching Based on the Integration of “Learning-Practice-Match-Evaluation” in Soccer. *Sports-Leisure*, 2023(18): 193–195.
- [7] Lv L, 2025, Practical Research on “Learning-Practice-Match-Evaluation” Integrated Soccer Classroom Teaching. *Physical Education Teacher and Friend*, 48(1): 1–7.
- [8] Luo Y, 2025, Research on the Strategy of Integrated Teaching of “Learning-Practice-Match-Evaluation” in Junior High School Soccer Under the Background of New Curriculum. *Contemporary Sports Science and Technology*, 15(5): 183–186.
- [9] Du S, 2025, Research on the Teaching Path of High School Soccer Based on the Integration of “Learning-Practice-Match-Evaluation”. *Teacher*, 2025(6): 101–103.
- [10] Zhong S, 2024, Construction and Implementation Strategy of “Learning-Practice-Match-Evaluation” Integrated Teaching Mode of School Soccer Under the Perspective of Physical Intelligence. *Educational Science Forum*, 2024(34): 76–80.

Publisher’s note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Pathway for the Development of Digital Teaching Resources for the “Supply Chain Management” Course in Vocational Colleges

Yujie Li*

Chongqing Energy college, Chongqing 402260, China

**Author to whom correspondence should be addressed.*

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract:

This article focuses on the development of digital teaching resources for the “Supply Chain Management” course in vocational colleges. It deeply explores the opportunities brought by digitization to the teaching of this course. Through the construction of digital teaching resources, it not only helps to enrich teaching content but also facilitates the innovation of teaching models and enhances the personalization of student learning. However, there are also challenges in practical implementation. By strengthening the construction of digital teaching resources for the “Supply Chain Management” course through various effective pathways, this study aims to better motivate students’ learning enthusiasm and practically improve their professional skills.

Keywords:

Vocational colleges
Supply Chain Management
Digital teaching resources

Online publication: April 26, 2025

1. Introduction

Digitization has demonstrated significant value in various fields. When conducting “Supply Chain Management” course activities, vocational colleges also need to keep pace with the times, strengthen the construction of digital teaching resources, and fully recognize the opportunities brought by digitization to the teaching of this course, as well as the difficulties faced in the practical construction of digital teaching resources. Continuously optimizing the construction of digital teaching resources can cultivate professionals who better meet the needs of the

industry. This article explores the opportunities brought by digitization to the teaching of the “Supply Chain Management” course in vocational colleges, analyzes the difficulties faced in the construction of digital teaching resources, and proposes specific construction pathways.

2. Opportunities brought by digitization to the teaching of “Supply Chain Management” in vocational colleges

Digitization has ushered in new development

opportunities for the advancement of education. For the “Supply Chain Management” course in vocational colleges, the construction of digital teaching resources possesses significant value that cannot be ignored. It not only greatly promotes the reform of course teaching but also enhances teaching quality. Through the development of digital teaching resources, the educational content of “Supply Chain Management” can be enriched. Traditionally, when teaching “Supply Chain Management” in vocational colleges, teachers often mechanically explain the knowledge in textbooks, resulting in both the teaching content and methods being relatively dull. However, during the construction of digital teaching resources, a plethora of multimedia materials such as videos, audio, and animations are incorporated into the teaching, making the abstract concepts of supply chain management more vivid and intuitive. For instance, when explaining the operational flow of the supply chain, teachers can utilize animations to visually demonstrate the process of raw materials being transported from suppliers to manufacturers, processed by the manufacturers, and then sold to consumers by distributors. This allows students to effortlessly comprehend the entire operational process of the supply chain, thereby facilitating a deeper understanding and mastery of this knowledge.

Additionally, digitization technology provides convenient conditions for innovating the teaching mode of “Supply Chain Management”. Teachers can explore intelligent and immersive new teaching modes through various functional modules on the teaching platform, such as voting, quick response, in-class exercises, themed discussions, and surveys. This enriches teaching activities and makes them more engaging, ultimately increasing students’ interest in learning. Furthermore, the construction of digital teaching resources can enhance the personalized level of “Supply Chain Management” teaching, ensuring that the diverse learning needs of different students are well met. By analyzing students’ learning situations through the learning platform, teachers can comprehensively understand all students’ learning habits, progress, and areas of improvement. This enables them to tailor different teaching plans for different students, while the learning platform also provides personalized learning resources. For students with stronger learning abilities, the platform often offers

expansive learning resources such as the latest industry research achievements, technologies, and development trends, aiming to further strengthen their professional capabilities. For students who struggle academically, the learning platform provides resources focused on basic knowledge explanation, helping them solidify their foundations, identify and address gaps, and keep up with the teacher’s teaching progress. The implementation of personalized teaching can maximize the learning potential of every student, contributing to an overall improvement in student learning outcomes.

3. Difficulties faced in the construction of digital teaching resources for the “Supply Chain Management” course in vocational colleges

Although the construction of digital teaching resources has brought unprecedented opportunities to the teaching of “Supply Chain Management” in vocational colleges, it also faces many difficulties in specific implementations. On one hand, the quality of digital teaching resources needs to be improved^[1]. Some digital teaching resources simply convert previous teaching content into digital form, which often lacks interest and interactivity, making it difficult to stimulate students’ interest in learning. Additionally, some digital teaching resources have issues such as unclear video images and sound, and the presentation of content lacks focus, making it hard to attract students’ attention. Furthermore, some digital teaching resources are divorced from actual supply chain management, and the presented content lacks practicality. On the other hand, the digital literacy of teachers for the “Supply Chain Management” course needs to be further improved. Some teachers find it difficult to flexibly use digital teaching tools and technologies in their teaching. When using learning platforms, they often only use some basic functions of the platform, which makes it difficult to fully utilize the application value of digital teaching tools. In addition, some teachers have relatively weak abilities to design digital teaching. When designing teaching activities for “Supply Chain Management,” they often do not comprehensively analyze the characteristics and advantages of digital teaching resources, as well as the personalized learning needs of students, resulting in

unsatisfactory teaching effects.

4. Effective paths for the construction of digital teaching resources for the “Supply Chain Management” course in vocational colleges

4.1. Clarifying the goals of digital teaching resource construction

Based on the actual talent demands of enterprises and industry development trends, reasonable long-term, medium-term, and short-term construction goals should be set for the digital teaching resource construction of the “Supply Chain Management” course^[2]. The short-term construction goal is the construction of basic digital teaching resources, such as converting knowledge content from textbooks into electronic teaching courseware and micro-courses on learning platforms. The medium-term construction goal is to complete the construction of virtual digital teaching resources based on industry characteristics, such as simulating various processes of the entire supply chain, including procurement, warehousing, and transportation. The long-term construction goal is to complete the construction of collaborative digital teaching resources for industry, education, and research. When planning the digital teaching resource construction for the “Supply Chain Management” course, vocational colleges should refer to professional talent training programs, refine the content, main responsible persons, and time nodes of digital teaching resource construction, ensure that the constructed digital teaching resources meet teaching needs, and prevent blind and random construction from causing resource waste.

4.2. Vigorously develop high-quality digital teaching resources

On one hand, it is necessary to strengthen the development of diverse digital teaching resources for the “Supply Chain Management” course. By introducing resource sharing through the learning platform, typical cases and situational game resources can be constructed. Additionally, by consulting reference textbooks, literature, watching excellent online courses, and national quality courses, we can draw lessons and absorb them. Keeping an eye on relevant news and information, and integrating them

according to the needs of the course, the digital teaching of the service course can be completed in modules such as the theoretical foundation of supply chain management, supply chain system design, operation management of each link (purchasing, production, inventory, logistics) in the supply chain, and supply chain system evaluation^[3].

On the other hand, resource optimization should be strengthened. A standardized digital teaching resource library should be established on the learning platform to classify and manage various resources. Teachers and students can quickly retrieve resources using keywords and other methods. Furthermore, higher vocational colleges need to regularly evaluate the digital teaching resource library for the “Supply Chain Management” course, update the resources in a timely manner, and eliminate outdated and poor-quality resources. When relevant laws, regulations, and policies are adjusted, it is necessary to promptly introduce them into the resource library and incorporate the latest industry cases to improve the practicality and timeliness of the content.

4.3. Strengthen the innovation of teaching models

Teachers of the “Supply Chain Management” course in higher vocational colleges need to focus on strengthening the innovation of teaching models while building digital teaching resources. Firstly, the application of hybrid teaching models should be enhanced. Hybrid teaching models combine online and offline teaching. Online teaching can use the learning platform to explain key and difficult knowledge of “Supply Chain Management” and conduct case analyses. It can also test students’ learning situations online. In offline teaching, teachers can use project training, group discussions, and invite industry experts to conduct special lectures to convey course knowledge and skills^[4]. For example, when teachers conduct teaching activities related to supply chain design, they can upload videos of industry experts analyzing supply chain strategies to the learning platform. Students can independently complete the basic knowledge learning of this lesson by watching the videos before class. In offline teaching, teachers can divide the entire class into different groups. Each group of students needs to design a supply chain strategic planning scheme based on the business operation data provided by the teacher and present the planning and design scheme in the classroom^[5]. Secondly,

teachers can also innovate and apply project-based teaching, using actual supply chain projects to drive students' learning motivation. Teachers can subdivide the project content into multiple sub-tasks ^[6]. For example, when organizing students to participate in the "regional fresh agricultural product supply chain optimization" project, teachers can divide the overall project tasks into market research, supplier selection, logistics and distribution, etc., and use the learning platform to simulate and analyze project plans and data, thereby strengthening the cultivation of students' practical abilities and problem-solving abilities. Finally, the level of personalized teaching should be improved. With the help of the learning platform, comprehensive data collection can be conducted on the data generated during the students' learning process, such as online learning time, duration, test scores, and homework completion. Through data analysis, teachers can accurately grasp students' learning characteristics and deficiencies, and use this as a basis to provide personalized learning guidance for students, as well as targeted promotion of digital learning resources, achieving individualized teaching.

4.4. Improving teachers' digital literacy

Higher vocational colleges need to strengthen systematic training for teachers of the "Supply Chain Management" course, implementing layered and categorized training for teachers' digital teaching resource development abilities. Teachers can be divided into different levels based on their teaching experience and technical proficiency, with different training content designed for each level. For newly hired teachers of the "Supply Chain Management" course, training should focus on the proper use of digital teaching tools and basic information technology operational skills. For senior teachers, training should emphasize course design, innovative teaching modes, and the application of technologies such as virtual reality, big data analytics, and augmented reality in course instruction ^[7]. This practical approach effectively improves teachers' digital literacy, enabling them to better complete the construction of digital teaching resources. Additionally, higher vocational colleges need to establish incentive mechanisms for the development of digital teaching resources for the "Supply Chain Management" course, recognizing and rewarding teachers who excel in digital resource development and innovative teaching modes

through special reward funds. The effectiveness of digital teaching resource construction should also be included in teacher performance evaluations to motivate teachers' autonomy and enthusiasm for building digital teaching resources ^[8]. Furthermore, colleges can improve teachers' digital literacy through collaboration with enterprises, organizing regular visits to relevant enterprises for teachers to learn and practice, keeping abreast of the latest industry developments, business processes, and technologies.

4.5. Strengthening the improvement of digital teaching resource construction guarantee mechanisms

Firstly, it is necessary to appropriately increase funding for the development of digital teaching resources for the "Supply Chain Management" course. Dedicated funds should be established for the development of digital teaching resources, the construction of learning platforms, and teacher training ^[9]. Additionally, colleges should actively raise funds through various channels, such as strengthening cooperation with relevant enterprises to obtain financial support, and providing adequate funding for the construction of digital teaching resources.

Secondly, colleges should obtain technical support through collaboration with professional educational technology companies, jointly building a stable digital teaching platform and providing technical support for subsequent upgrades and maintenance ^[10]. Regular invitations should be extended to company technicians to provide on-site technical guidance, timely assist teachers and students in solving technical problems encountered when using the platform, and maximize the application value of the learning platform.

Thirdly, a scientific evaluation system for digital teaching resources in "Supply Chain Management" should be established, including assessments of the application effectiveness of digital teaching resources, the level of digital teaching technology, and the quality of resource content. Feedback from teachers and students on the use of the learning platform should be regularly collected to improve and optimize the platform accordingly.

5. Conclusion

In conclusion, the construction of digital resources for the "Supply Chain Management" course in higher vocational

colleges plays a significant role in cultivating high-quality supply chain management talents. Therefore, colleges need to clarify the goals of digital teaching resource construction, vigorously develop high-quality digital teaching resources, strengthen the innovation of teaching modes, improve teachers' digital literacy, and

enhance the improvement of digital teaching resource construction guarantee mechanisms. With the continuous development of various emerging technologies, the level of intelligence and personalization of digital teaching resource construction should be continuously improved.

Funding

Chongqing Vocational Education Teaching Reform Research Project, "Research on the Teaching Reform and Practice of the 'Supply Chain Management' Course in Vocational Colleges Promoted by Digital Teaching" (Project No.: Z233317)

Disclosure statement

The author declares no conflict of interest.

References

- [1] Wang H, 2025, Analysis of the Application of SPOC-Based Hybrid Teaching Model in the Teaching of "Supply Chain Management". *China Storage & Transportation*, 2025(1): 95–96.
- [2] Zhang J, 2024, The Ideological and Political Theoretical Framework and Practical Path of the "Supply Chain Management" Course Based on the Case Teaching Model. *Logistics Sci-Tech*, 47(3): 156–159.
- [3] Cuo M, 2024, Construction Path of "Loose-leaf" Course Resource Materials for Higher Vocational Mathematics under the Background of Informatization. *China New Telecommunications*, 26(4): 203–205 + 196.
- [4] Song M, Ma T, Xie J, et al., 2023, Exploration and Practice of the SPOC and Rain Classroom-Based Hybrid Teaching Model for "Supply Chain Management". *Logistics Sci-Tech*, 46(19): 159–163.
- [5] Wang H, 2024, Practical Research on the SPOC-Based Hybrid Teaching Model in the "Supply Chain Management" Course. *China Storage & Transportation*, 2024(12): 66–67.
- [6] Wang J, 2024, Development of "Loose-leaf" Teaching Materials for "Supply Chain Management" in Vocational Colleges under the Integration of "Position, Course, Competition, and Certificate". *Journal of Lanzhou Vocational and Technical College*, 40(3): 49–52 + 77.
- [7] Zhang Q, Wang W, 2023, Exploration and Practice of Ideological and Political Construction in Professional Group Platform Courses – Taking "Supply Chain Management" as an Example. *Logistics Sci-Tech*, 46(11): 155–157.
- [8] Sheng G, Zhang X, Gao M, 2023, "Digital Three-dimensional Classroom" Course Construction and Reform – Taking the "Supply Chain and Logistics Management" Course as an Example. *Logistics Technology*, 42(10): 120–122.
- [9] Yang Y, Zhang Q, 2024, Research on the Ideological and Political Teaching Reform of Supply Chain Management Professional Data Analysis Courses from the Perspective of "Digital Literacy". *Modern Business and Trade Industry*, 45(9): 200–202.
- [10] Feng H, Wu D, Lan H, 2023, Discussion on the Teaching Mode of KPIL-Spark Platform Based on Online and Offline Mixed Teaching – Taking the "Operations and Supply Chain Management" Course as an Example. *Logistics Technology*, 42(7): 142–146.

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

An Analysis of Conceptual Metaphors in Harry Potter and the Philosophy's Stone from the Perspective of Cognitive Linguistics

Yiming Li, Yuanpeng Huang*

Shanxi Normal University, Taiyuan 030031, Shanxi, China

*Corresponding author: Yuanpeng Huang, haikuotiankong717@163.com

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract:

Metaphor is not only a rhetorical device but also can be seen as a cognitive tool and a kind of thinking method. Literature, especially novels, often uses plenty of conceptual metaphors to explain abstract concepts and phenomena. This paper takes the first volume of the Harry Potter series, "Harry Potter and the Philosopher's Stone," as its corpus, conducting a qualitative and quantitative analysis of the conceptual metaphors within it, which is based on the theory of Critical Metaphor Analysis. The aim is to explore the connotative meaning embedded in the conceptual metaphors and systematically summarize the functions of the conceptual metaphors of novels.

Keywords:

Conceptual metaphor
Critical metaphor analysis
Metaphorical functions
Novel
Harry potter

Online publication: April 26, 2025

1. Introduction

The term "metaphor" originates from the Greek word "metaphora," where "meta" signifies across and "pherein" denotes transfer^[1]. Therefore, literally, "metaphor" means a transfer from one point to another. Hawkes suggests that metaphor is a distinctive linguistic process^[2]. In this process, certain aspects of one thing are transferred onto another, allowing the latter to be described in a way similar to the former. Metaphor not only involves the matter of linguistics and rhetoric, but it also refers to philosophy and culture. It covers complex questions

related to the knowledge of aesthetics, poetics, linguistics, cultural studies, and philosophy^[3]. Addressing these questions requires a deep understanding that extends far beyond the confines of any single discipline, drawing upon the collective efforts of humans to understand the charm of language and connotative meaning concealed within. Lakoff and Johnson formally presented the cognitive role of metaphor and introduced the conceptual metaphor theory in their co-authored book *Metaphors We Live By*. They argued that metaphor is not merely a rhetorical tool, as traditionally perceived, but a cognitive

mechanism that appears not only in literary works but also in everyday language ^[1].

However, with further research development, some scholars questioned whether Conceptual Metaphor Theory attached too much importance to human cognition and ignored other factors. Until the year 2004, Charteris proposed Critical Metaphor Analysis. He introduced cognitive linguistics, pragmatics, and corpus analysis into metaphor analysis, which opened up a new way for metaphor analysis, broadened the scope of metaphor research, and made metaphor research more comprehensive ^[4]. According to Charteris, metaphor is not only cognitive, but also linguistic and pragmatic. Critical Metaphor Analysis has its model and steps for metaphor research, which provides scholars with a new method to study metaphor. Critical Metaphor Analysis takes society, thinking and language together into consideration to uncover the ideologies and power relations implied in discourse ^[4].

Up till now, the “Harry Potter” series, created by the British author J.K. Rowling, have been translated into nearly eighty languages and published in over two hundred countries and regions, with a global total sales nearly four hundred million, setting new records in publishing and literary history, which ranked the third in the literary charts in terms of the number of books sold, and only behind the Bible and Quotations from Chairman Mao Tse-tung. It is not an exaggeration to say that it is one of the most widely disseminated, commercially valuable, and socially influential literature in our post-industrial society.

From the text to phenomena, “Harry Potter” offers us more than a reading experience. Research on “Harry Potter” has gradually deepened, presenting a situation of diverse opinions both within and beyond the text ^[5]. However, there has been almost no research on the conceptual metaphors within “Harry Potter.” Many scholars, when studying the series, tend to concentrate on the protagonist, lacking a systematic and comprehensive study of the conceptual metaphors. Presently, most research on metaphor is based on Conceptual Metaphor Theory and Critical Metaphor Analysis. Conceptual Metaphor Theory is widely applied in discourse analysis of political discourse, news reports, and other types of texts ^[6]. Compared to these areas, this kind of research

rarely appears in literature, especially novels.

In light of this, this paper adopts Conceptual Metaphor Theory proposed by Lakoff and Johnson as its theoretical foundation, selecting the most typical work from the Harry Potter series, “Harry Potter and the Philosopher’s Stone,” as the corpus, and conducts a qualitative and quantitative analysis of the conceptual metaphors within it, combining with the theory of Critical Metaphor Analysis. The aim is to explore the meaning embedded in the conceptual metaphors of the novel, systematically summarize the functions of conceptual metaphors in novels, and, through the analysis based on Conceptual Metaphor Theory, help readers comprehend the expressions in the text.

2. Theoretical foundation

2.1. Features of conceptual metaphor

Metaphor was initially perceived as a rhetorical device. However, with the publication of the masterpiece *Metaphors We Live By*, George Lakoff and Mark Johnson in 1980 marked a turning point in metaphor research ^[1]. They argued that, according to conceptual metaphor theory, the essence of metaphor is to understand and experience one type of thing using another type of thing. It is not only a linguistic phenomenon, but also exists in the conceptual system of human thinking, and is a major feature of the human thought process ^[1]. The core idea of conceptual metaphor theory lies in viewing metaphor as a cognitive phenomenon, a way of acting shown by language. Abstract concepts such as “Debate is war” and “Love is journey” are conceptual metaphors, and metaphorical expressions refer to the use of actual language in a variety of ways to realize abstract concepts.

Lakoff and Johnson believed that, “The way we think is a result of metaphorical guidance” ^[1]. The concept of “mapping” is employed to explain the transformation from the source domain to the target domain in conceptual metaphor. Metaphorical meaning is constructed by language users in a one-way mapping between the source and target domains. The process of mapping usually consists of two aspects: through the source domain to the target domain. Source domains are generally known cognitive domains that are specific to people. The target domain, on the other hand, is generally

an unrecognized cognitive domain that is abstract and not easily understood. Even if the source and target domains are in one-to-one correspondence, a target domain can have multiple source domains, which means that an abstract concept can be expressed in terms of many different concrete things, and vice versa does not hold. The process of conceptual metaphor mapping is to take the meaning in the source domain and partially map it to the target domain. This process reflects the cognitive process of individuals, namely, the transition from the concrete to the abstract^[7]. Conceptual metaphor has three main distinctive features, and they help to distinguish between conceptual metaphor and rhetoric. The three distinctive features are prevalence, cognitive nature and systematic nature.

2.1.1. Prevalence of conceptual metaphor

Richards noted that metaphors pervade our everyday life^[8]. Ortony likewise argued that every language is inherently metaphorical^[9]. Further supporting this ubiquity, studies by Gibbs and McNeill demonstrated that metaphor is not confined to a handful of eloquent speakers or writers; rather, it is a pervasive phenomenon manifesting throughout the spoken and written language used by ordinary people in day-to-day contexts^[10].

2.1.2. Cognitive nature of conceptual metaphor

Lakoff and Johnson proposed that metaphor is deeply ingrained in human cognition, claiming it occurs not just in words but also in thought and action. In their view, the essence of a metaphor is understanding and experiencing one kind of thing in terms of another, which implies that metaphor is fundamentally a cognitive process by which experiences in one conceptual domain help us make sense of another domain^[1]. The publication of *Metaphors We Live By* was a watershed moment in metaphor research, ushering in what Steen later called the “cognitive turn” – a shift to viewing metaphor principally as a matter of thought rather than mere rhetoric^[11].

2.1.3. Systematic nature of conceptual metaphor

Conceptual metaphors operate through systematic correspondences, or “mappings,” between a source domain and a target domain. In such mappings, language users project knowledge from a concrete or well-

understood source domain onto a more abstract target domain in a unidirectional manner. This means that elements of the source domain systematically correspond to elements of the target domain^[12]. Typically, the source domain is a familiar, tangible realm of experience, while the target domain represents an abstract concept that is harder to grasp directly. Notably, a single target domain can be structured by multiple source domains—an abstract concept may be understood through several different concrete schemas, although each mapping itself is one-directional (a concrete source frames the abstract target, not vice versa). Through this partial transfer of structure from source to target, conceptual metaphor mapping allows us to utilize concrete experience to make sense of complex, intangible ideas. In sum, this systematic mapping process is a key cognitive mechanism that underlies how metaphors inform our understanding of abstract concepts.

2.2. Classification of conceptual metaphor

Classifying metaphors can be challenging due to their complexity, but Lakoff and Johnson established a clear taxonomy of three fundamental types of conceptual metaphors: orientational metaphors, ontological metaphors, and structural metaphors^[1]. The analysis in this paper relies heavily on this tripartite classification.

2.2.1. Structural metaphor

Structural metaphors allow one concept to be understood by means of another, more concrete concept’s structure^[13]. In these cases, the source domain offers a well-defined organizational schema that is applied to the target domain. A classic example is “Time As Money” – an abstract concept (time) is conceptualized using the structural framework of a concrete domain (money and finance). This metaphorical mapping yields familiar expressions like “spending time,” “saving time,” or “investing time,” which illustrate how the properties of money (something that can be earned, spent, budgeted, or wasted) give structure to our understanding of time. Through structural metaphors, an otherwise abstract or complex idea can be discussed and reasoned about in terms of a simpler, more concrete domain’s internal logic and relationships. Such metaphors are powerful because they carry over extensive inferences and implications

from the source domain to illuminate the target domain.

2.2.2. Orientational metaphor

Orientational metaphors structure entire domains of experience along spatial axes (e.g., up vs. down, inward vs. outward). They are grounded in universal human bodily experiences of space. For instance, many cultures associate “up” with positive or higher quantity and “down” with negative or lower quantity ^[14]. This association is reflected in everyday expressions: happiness is described as “feeling up” or “on top of the world,” whereas sadness is “downcast” or “feeling down.” In orientational metaphors, an abstract concept is systematically mapped onto a spatial orientation, imparting an intuitive physical structure to intangible experiences and allowing people to reason about them using spatial relationships.

2.2.3. Ontological metaphor

Ontological metaphors help us comprehend intangible phenomena by conceiving of them as tangible entities or substances ^[15]. In other words, abstract experiences or ideas are understood as if they were concrete objects, discrete substances, or even persons. This objectification makes it possible to quantify, categorize, or interact with abstract concepts. For example, we often talk about the mind as though it were a physical container (“my mind

is full of ideas”), or we discuss emotions and ideas as tangible objects that can be held or lost (“grasping an idea,” “losing hope”). Similarly, through personification (a subtype of ontological metaphor), we attribute human qualities or abilities to non-human or abstract entities — consider phrases like “justice is blind” or “inflation is eating away at our savings.” Such metaphors impose physical boundaries or characteristics onto abstract domains, thereby rendering them more accessible to human understanding and reasoning.

3. Analysis of conceptual metaphors in “Harry Potter and the Philosophy’s Stone”

Quantitative analysis aims to depict the frequency of conceptual metaphor use with quantitative statistics, and quantitative analysis can make the corpus more accurate and intuitive, and the research results more convincing. The quantitative analysis in this paper aims to describe the number and frequency of occurrences of metaphorical expressions using quantitative statistics. Following the theory proposed by Charteris-Black for Critical Metaphor Analysis ^[16], this study employs three steps: First, a thorough reading of the text is conducted to identify metaphors according to the MIP, recognizing

Table 1. Classification of metaphors

Type of metaphors	Keywords	Frequency	Percentage
Structural metaphor	Stage Set out Arrive	2	0.58%
Journey metaphor			
Building metaphor	Build Foundation Collapse	3	0.86%
War metaphor	Attack Won Defend	5	1.44%
Plant metaphor	Root Fruit Blossom	3	0.86%
Animal metaphor	Lion Eagle Badger Snake	46	13.25%
Color metaphor	Dark Gold	32	9.23%
Weather metaphor	Gloomy Coldly	11	3.17%
Water metaphor	Flood Flow Run	24	6.91%
Orientational metaphor Up/down metaphor	Up Down High Low	101	29.16%
Ontological metaphor			
Personification metaphor	Wake Find Say	112	32.28%
Container metaphor	Enter Invest Out	11	3.17%

the similarities between the source domain and the target domain. Second, identified metaphors are analyzed, eliminating those without clear mapping relationships. Suitable metaphors are then classified. Third, based on the framework for Critical Metaphor Analysis, the connotative meanings conveyed through metaphors and the author's intentions are analyzed. From "Harry Potter and the Philosophy's Stone," numerous metaphors have been found. They are categorized and summarized based on their source domains, including journey metaphors, building metaphors, war metaphors, plant metaphors, animal metaphors, color metaphors, weather metaphors, water metaphors, personification metaphors, container metaphors, and up/down metaphors, a total of 11 main types. The specific distribution is presented in the table below.

From **Table 1**, it is evident that the most frequently used metaphor in this novel is the personification metaphor. Other kinds of metaphors include animal metaphor, up/down metaphor, color metaphor, and water metaphor. The container metaphor, weather metaphor, and war metaphor are also used relatively frequently. The keywords for personification metaphor are mostly verbs, while the keywords for other metaphors are mostly nouns and adjectives. Detailed explanations of the forms and mapping processes of these main metaphors will be provided in the following sections.

3.1. Structural metaphor

As mentioned earlier, metaphor is a cognitive phenomenon, and the mapping between the source domain and the target domain in metaphors is a process where people, based on their experiences, use familiar and concrete concepts to understand less familiar and abstract concepts^[7]. Analyzing specific source and target domains helps us comprehend abstract concepts and understand the role of conceptual metaphors. The types of structural metaphors and their mapping relationships will be detailed in the following sections.

3.1.1. War metaphor

War has deeply influenced language, culture, and thought. Generally, war refers to fierce conflicts between several countries, regions, or groups for political or economic interests, characterized by their long duration and difficulty. War has become an effective tool in people's everyday

discourse, used to describe complex and abstract events. War metaphors portray non-war activities or events by analogizing them to real-world warfare^[17], establishing mappings between the war domain and various other conceptual domains (**Table 2**).

Table 2. War metaphor with source and target domains

Type of metaphor	Source domain	Target domain
War metaphor	War	Argument

Example 1: "She attacked every point in my argument," said Ron (P84). In the given context, Ron is complaining about Hermione, and the word "attack" is typically associated with war. The argument between Hermione and Ron is framed as a war, with opposing sides requiring both offensive and defensive strategies. The real meaning of this sentence is that Hemione always argues with Ron. The war metaphor helps readers realize the urgency of this debate, making the conflict vivid and portraying Hermione's character as knowledgeable, talented, and sensitive. This contributes to helping readers understand the author's intention.

3.1.2. Journey metaphor

A journey includes several fundamental elements such as the route and the destination, making it a highly effective source domain^[18]. Keywords like "stage," "set out," and "arrive" are used in the journey metaphor. This metaphor frequently appears in the novel, using specific stages of displacement of people to map the development of abstract events. This approach allows the author to vividly present abstract concepts and phenomena (**Table 3**).

Table 3. Journey metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Journey metaphor	Journey	Life

Example 2: He hadn't expected something like this the moment they arrived (P142). In context, this is Harry's inner monologue before taking part in the Quidditch. He believes he hasn't learned enough since arriving at Hogwarts, feeling extremely nervous. Life is compared to a journey, and this is a moment that has never occurred

before. The word “arrive” associated with a journey reflects Harry’s anxiety, aiding readers in understanding the situation at that moment and contributing to creating Harry’s character.

3.1.3. Building metaphor

In conceptual metaphor, abstract concepts are often seen as buildings, which can be constructed, reinforced, or collapse ^[19]. Mapping buildings onto more abstract target domains helps to change abstraction to concrete, facilitating a deep understanding of the text’s meaning (Table 4).

Table 4. Building metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Building metaphor	Building	Pain

Example 3: Quirrell screamed and tried to throw Harry off. The pain in Harry’s head was building, he couldn’t see, he could only hear Quirrell’s terrible shrieks and Voldemort’s yells of, “KILL HIM! (P188) In this context, the description is about Harry’s fight with Professor Quirrell, during which Harry begins to have a headache. “Build” is a word commonly used in the context of construction. Now, pain is likened to a building that can be established. This building metaphor vividly illustrates the process of Harry’s headache, making the abstract experience more tangible. It allows readers to feel the pain as if they were there, showing Harry’s characteristics – brave and strong. Even as the scar on his head starts to pain, he doesn’t give up and continues to battle with Voldemort.

3.1.4. Plant metaphor

The growth process of plants, including rooting, sprouting and flowering, shares similarities with the processes of events happening, development, and outcomes ^[20]. Plant metaphors leverage people’s understanding of roots, stems, flowers, fruits, soil, and the plant’s growth environment, mapping plant-related structures onto the characters, aiding in the understanding of specific situations (Table 5).

Table 5. Plant metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Plant metaphor	Plant	Dudley

Example 4: Dudley stood rooted to the spot (P11). In the context, it is evident that Harry’s cousin Dudley is very frightened. The word “root” had a metaphorical meaning. Dudley is described as if he were a plant growing on the ground. The exact meaning of this sentence is that Mr. Dudley is standing still. This metaphor vividly portrays the tense situation and shapes Dudley’s character as extremely timid.

3.1.5. Animal metaphor

In “Harry Potter,” J.K. Rowling establishes mappings between “people or concepts” and “animals” based on their similarities in behavior or cultural cognition, using numerous animal metaphors to shape characters or expound the theme. Rowling extensively uses animal metaphors in this book, making the story lively and interesting while revealing themes like “life and death” and “love and courage” in a way that is easily understood by readers. Some notable animal metaphors include the animals of the four major houses, Sirius Black’s “dog” Patronus, and Dumbledore’s phoenix, Fawkes (Table 6).

Table 6. Animal metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Animal metaphor	Lion Snake Dog Phoenix	Students Hope Love

(1) Lion, Badger, Eagle, Snake

In the novel, Rowling divides Hogwarts into four houses: Gryffindor, Hufflepuff, Ravenclaw, and Slytherin, using the lion, badger, eagle, and snake as representative animals for each house. According to Rowling’s descriptions in this book, each house favors students with corresponding traits. Therefore, these animals not only represent the spirit of a particular house but also imply common characteristics of certain types of characters. Gryffindor, where the protagonist Harry and most positive characters study, focuses on cultivating qualities of bravery and honor. Lions are known for their strength and

fierceness, often symbolizing bravery in Western culture.

Unlike Gryffindor, Hufflepuff, represented by the badger, prefers honest and hardworking students. Badgers, animals living deep in the soil, often give the impression of being “low-key and honest” in Western culture. Eagles are known for their keen eyesight, symbolizing intellect when mapped onto humans. Eagles have high status in this house, as seen in the eagle-shaped door knocker at the entrance to their dormitory, which only opens when students answer questions correctly. Slytherin, represented by the snake, especially favors students with a desire for power and ambition. Snakes are skilled at capturing prey in nature, and some are venomous. Therefore, snakes are often labeled as sly and cunning. Characters from Slytherin in the novel often exhibit a strong desire for fame and fortune, intending to get their way by hook, such as Voldemort’s craving for immortality by killing. Rowling’s use of the snake easily leaves a lasting impression on readers as “evil and ambitious,” also reflecting the theme of good versus evil in this literature.

(2) Dog

Sirius Black transforms into a dog, symbolizing loyalty and misfortune in the Western world. Sirius Black is portrayed as a character who is loyal to his beliefs and friends. He advocates for equality and opposes Voldemort’s rule. The black dog metaphor not only signifies Sirius Black’s loyal and courageous characteristics but also alludes to the tragic aspects of his life, hinting at his ultimate sacrifice to protect Harry.

(3) Phoenix

Albus Dumbledore’s Patronus is the phoenix Fawkes. Phoenixes have long been regarded as lucky creatures in Western literature. If their owner or friend is harmed, they fearlessly engage in battle against evil. In the novel, the phoenix represents justice and has extraordinary magical abilities. The phoenix undergoes a process of rebirth through self-immolation, symbolizing the eternal essence of life. Its tears can heal the wound, and it sacrifices itself to save its owner and friends. The phoenix’s embodiment is Dumbledore, and all aspects of him are closely related to the phoenix, which is linked with hope and life.

3.1.6. Color metaphor

Color metaphor refers to using different colors as the source domain to establish a mapping between “people

or concepts” and “colors” through similarities of cultural cognitive^[21]. Different colors carry different connotations, and there are differences between cultures. In Western culture, black represents evil and darkness, while gold symbolizes glory, and orange represents passion and romance (Table 7).

Table 7. Color metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Color metaphor	Color	Abstract Entities

In the Harry Potter series, “Dark Art” is referred to as twisted and unknown magic, while the golden architecture of the lion represents glory and greatness. Through color metaphors, the author vividly portrays the characteristics of things, making it easier for readers to understand.

3.1.7. Weather metaphor

The weather is always changing, ranging from sunny to rainy, from overcast to calm. Weather metaphor involves mapping weather onto abstract entities such as a person’s mood, creating a more vivid and imaginative representation that helps the reader understand (Table 8)^[22].

Table 8. Weather metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Weather metaphor	Weather	Voice

Example 5: “I’m sure Firenze thought he was acting for the best,” he said in his gloomy voice (P229). In context, Professor Snape is mocking Professor Firenze, who teaches Defense Against the Dark Arts class, implying that he is arrogant. The word “gloomy,” originally used to describe weather, is utilized here to characterize a person’s voice. This metaphor contributes to the creation of an oppressive atmosphere. It allows readers to immerse themselves in the scene and aids in shaping the character of Professor Snape – sensitive, suspicious, and unsmiling.

3.1.7. Water metaphor

Water can exist in various forms, either flowing into

the sea or rushing and dispersing in different directions. The water metaphor refers to using water as the source domain and mapping it onto people or animals as the target domain, making expressions more concise, vivid, and aiding readers in deep understanding (Table 9)^[23].

Table 9. Water metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Water metaphor	Water	Owl

Example 6: As the owls flooded into the Great Hall as usual, everyone's attention was caught at once by a long, thin package carried by six large screech owls (P151). In this context, it describes the Christmas scene at Hogwarts, using the source domain of water with the word "flood." When reading the word "flood," readers can imagine the scene of a place covered with water and the approaching Christmas, with numerous owls delivering letters to students. This highlights the bustling activity and the abundance of owls at Hogwarts, making this picture more vivid.

3.2. Ontological metaphor

As mentioned above, ontological metaphor involves perceiving abstract concepts as if they were concrete objects or substances^[15]. It helps people understand abstract concepts such as events, emotions, and activities by treating them as tangible entities or substances. The mapping relationships in ontological metaphor are illustrated in Table 10.

Table 10. Type of conceptual metaphor with source and target domains

Type of conceptual metaphor	Source domain	Target domain
Personification metaphor	Human	Hogwarts
Container metaphor	Container	Ideas
Entity metaphor	Entity	Abstract concepts

3.2.1. Personification metaphor

The personification metaphor is to see the thing as having a human nature, which is a very obvious

ontological metaphor^[24]. It allows us to understand a range of non-human activities by human motivations and characteristics. The source domain refers to humans, which can indicate the human itself, such as flesh, bones.

Example 7: One morning in mid-December, Hogwarts woke to find itself covered in several feet of snow (P231). In the context, this sentence describes the scene at Hogwarts on a December morning. It portrays Hogwarts as if it were a person waking up and "discovering" the snow. The author projects human actions onto the abstract concept, giving it qualities of awakening. By this metaphor, readers can feel the surprise and delight of the students when seeing the snow. The metaphor creates a joyful and serene atmosphere.

3.2.2. Container metaphor

The container metaphor is to consider the ontology as a kind of container, so that it has boundaries, can be quantified, and can enter and exit^[25]. The most representative and typical of ontological metaphors is the container metaphor. People are entities independent of the world around them, and each person is a container by himself, with sub-interfaces, inside and outside, etc. The container metaphor is that people project their bodily experiences onto the objective world outside the body. The world outside includes rooms and buildings with obvious container features, to forests and open spaces with less obvious container features and even abstract horizons, events, activities and states that can be conceptualized as containers^[25].

Example 8: Mr. Dudley gave himself a little shake and put the cat out of his mind (P14). In the given context, this sentence is the psychological description of Harry's cousin, Dudley. Dudley meets a strange cat at the doorstep, which is, in fact, Professor McGonagall. And then, he tries to calm himself and forget about it. Here, the metaphorical use of "mind" and "idea" as containers makes the abstract concept more tangible. It emphasizes Dudley's effort to forget the cat.

3.2.3. Entity metaphor

Example 9: This was why Harry spent as much time as possible out of the house, wandering around and thinking about the end of the holidays, where he could see a tiny ray of hope (P22). In this context, this sentence describes

Harry's mental state as he anticipates a turning point in his life, hoping to escape the long-term abuse from Uncle Vernon's family. A cliché metaphor, "a ray of hope," is used in this sentence. This metaphor has been used a lot and has lost its original effect and novelty. The phrase "a ray of" is employed as a quantifier to describe hope, transforming the intangible concept of hope into something concrete. This metaphor vividly portrays Harry's difficult position—detested by his aunt's family with nowhere else to go, laying the groundwork for his entry into the magic world.

Example 10: Sometimes, when he strained his memory during long hours in his cupboard, he came up with a strange vision: a blinding flash of green light and a burning pain on his forehead (P16). In the given context, this sentence describes Harry's painful recollections. The exact meaning is that whenever he begins to recall Voldemort, his scar hurts. Memory is typically an abstract concept, and "strain" is usually associated with concrete items like ropes. It is used as a verb to describe memory, turning the abstract concept into something tangible. This metaphor emphasizes Harry's painful experience, shaping his character as someone who, despite the pain, repeatedly recalls because he doesn't want to forget his parents.

These forms of language have become so prevalent that people are generally no longer aware of their metaphorical nature. This just shows that people's way of thinking has automatically compared two things and thought, experienced, and talked about abstract things in terms of concrete things, so that abstract things seem to have the characteristics of concrete things to systematically describe the disorganized external world. Metaphorical way of thinking, like other perceptions, has become the basic way people know the world and live by.

3.3. Orientational metaphor

Orientational metaphor is based on people's perception of their bodies, constructing an independently comprehensive conceptual system in which elements are interconnected and adhere to spatial orientation with respect to each other. The up/down metaphor, grounded in both bodily and cultural experience, introduces spatial concepts, facilitating a clearer understanding of the logical relationships between various entities for the reader^[14].

Table 11. Orientational metaphor with source and target domains

Type of metaphor	Source domain	Target domain
Up/down metaphor	Up/down	Quality or Grade

Example 11: "But what does a Ministry of Magic do?" "Well, their main job is to keep it from the Muggles that there's still witches and wizards up and down the country (P29). In the context, Hagrid is introducing the Ministry of Magic to Harry, expressing his dissatisfaction with the Ministry's lack of efficiency. The speaker utilizes the experience of space, illustrating quality and grade within a spatial structure. According to Lakoff's opinion, "Up is good, down is bad"^[1], when quality is at a high level, it is good, and when it's at a low level, it is undesirable. In this sentence, 'up' refers to wizards with high status, while 'down' refers to those with lower status. This orientational metaphor vividly illustrates the hierarchy difference between the two kinds of wizards, making the description clear and plain.

4. Metaphorical functions in novels

4.1. Explanation

Thomson pointed out that metaphor, as a tool of expression, acts as a bridge connecting discourse and the audience^[3]. People can express opinions about the real world through metaphor. Due to its property, metaphor serves an explanatory function. Firstly, metaphor is a unique language phenomenon whose essence lies in humans using a specific symbolic system to interpret their own and others' understanding of the same things or concepts. Secondly, metaphor is also a way of thinking, which is often closely linked to our experiences^[26]. When people transform one concept (experience) into another, similar feelings and understanding arise due to the similarity between the concepts and experiences. Therefore, metaphor carries some elements, such as people's thoughts and behaviors. Thirdly, metaphor plays a unique role in constructing the connection between the source domain and the target domain. Metaphor allows people to think from their perspectives, rather than viewing the same things with the same viewpoint^[27]. In summary, metaphor serves as a bridge between an abstract concept (experience) and another concrete concept

(experience). Conceptual metaphor in novels not only paves the road to understanding the essence of things but also serves an ideological function.

4.2. Empathy

It refers to establishing the same emotional identification and attitudes with the author through metaphor, allowing readers to share the same emotions and stance. The depiction in the novel is also a process of conveying emotions, with a focus on expressing characters' feelings and portraying the characters by conceptual metaphors, thereby showing attitudes to the readers. Metaphor plays a role in "empathy" in novels, making it an indispensable part. Through conceptual metaphor, the emotional influence of literature can be strengthened, providing a deeper understanding of characters' thoughts, thereby striking an empathetic chord with readers.

4.3. Character portrayal

Conceptual metaphor contributes to creating well-rounded characters. The characteristics of characters change with different types of conceptual metaphors, achieving a comprehensive image of characters. For instance, the protagonist, Harry, the author shapes his brave and passionate character through an animal metaphor, the Gryffindor lions. Additionally, other kinds of metaphors are employed to show Harry's other personalities, including humor and sincerity.

4.4. Persuasion

Conceptual metaphors, with a powerful reasoning system, can persuade readers, prompting them to think of the true intentions of the narrator or the author. For example, the color metaphor in this novel, Dark Art. All the professors in Hogwarts warn the students to stay away from it, using this color to represent its danger and evil. It is this unspoken

metaphor that sparks readers' imagination, achieving the purpose of persuasion. At the same time, the author also uses this metaphor to tell the readers: to keep away from dark, dirty things, to be open-minded and pure, highlighting the theme of "love and hope" and "good and evil."

5. Conclusion

In contrast to traditional metaphor theory, Lakoff's conceptual metaphor theory argues that metaphor not only plays a rhetorical role at the linguistic level, but also cognitive way of understanding the world and an emphasis on the role of people's living experience and cognitive abilities in discourse comprehension. Conceptual metaphors are extensively used in English novels, making characters' complex thoughts and experiences more vivid and concrete, which also arouse special associations for readers, enhancing their understanding of the text and contributing to the creation of well-rounded characters.

This paper focuses on conceptual metaphors in "Harry Potter and the Philosopher's Stone" based on the Critical Metaphor Analysis. It categorizes the types and mapping mechanisms of conceptual metaphors in this novel, exploring their underlying meanings. The study concludes with an analysis of the functions of conceptual metaphors in the novel, which also reveals that the most frequently used metaphor in this novel is personification metaphor, with other prevalent types including building metaphor, journey metaphor, war metaphor, plant metaphor, water metaphor, container metaphor, weather metaphor and others. The classification and analysis of conceptual metaphors in literature contribute to enhancing the understanding of this cognitive tool for English learners. This, in turn, improves their reading skills and enables a more accurate comprehension of the author's intentions and a deeper understanding of characters in English novels.

Funding

Shanxi Normal University Graduate Innovation Project (Project No.: 2024XSY31)

Disclosure statement

The author declares no conflict of interest.

References

- [1] Lakoff G, Johnson M, 1980, *Metaphors We Live By*. University of Chicago Press, Chicago.
- [2] Hawkes T, 1975, *The Theater and the Dream: From Metaphor to Form in Renaissance Drama*. *Renaissance Quarterly*, 1975(1): 1–3.
- [3] Thompson S, 1996, *Metaphor: Implications and Applications*. Lawrence Erlbaum Associates Publishers, New Jersey.
- [4] Charteris-Black J, 2004, *Critical Metaphor Analysis*. Palgrave Macmillan UK, London, 243–253.
- [5] Nabifar N, Kazemzadeh H, 2012, Types of Grammatical Metaphors in *Harry Potter and the Prisoner of Azkaban*. *Journal of Applied Linguistics*, 5(10): 192–219.
- [6] Gibbs R, 2011, Evaluating Conceptual Metaphor Theory. *Discourse Processes*, 48(8): 529–562.
- [7] Ungerer F, 2006, *An Introduction to Cognitive Linguistics*. Foreign Language Teaching and Research Press, Beijing.
- [8] Mehlenbacher A, Harris R, 2017, A Figurative Mind: Gertrude Buck's *The Metaphor as a Nexus* in Cognitive Metaphor Theory. *Rhetorica: A Journal of the History of Rhetoric*, 35(1): 75–109.
- [9] Ortony A, Reynolds R, Arter J, 1978, Metaphor: Theoretical and Empirical Research. *Psychological Bulletin*, 85(5): 919.
- [10] Gibbs R, 2006, Metaphor Interpretation as Embodied Simulation. *Mind & Language*, 21(3): 434–458.
- [11] Steen G J, 2011, The Contemporary Theory of Metaphor—Now New and Improved! *Review of Cognitive Linguistics*, 9(1): 26–64.
- [12] Cian L, 2017, Verticality and Conceptual Metaphors: A Systematic Review. *Journal of the Association for Consumer Research*, 2(4): 444–459.
- [13] Kheslati H, Alavi Moghaddam M, Firozi Moghaddam M, 2022, An Analysis of the Structural Conceptual Metaphor of. *Literary Text Research*, 26(92): 253–283.
- [14] Baranyiné J, 2018, *Oriental Metaphors. Nature, Metaphor, Culture: Cultural Conceptualizations in Hungarian Folksongs*. Springer Nature, Singapore, 115–131.
- [15] Dreyfus B, Gupta A, Redish E, 2018, Applying Conceptual Blending to Model Coordinated Use of Multiple Ontological Metaphors. *Conceptual Metaphor and Embodied Cognition in Science Learning*, Routledge, 80–106.
- [16] Charteris-Black J, 2004, *Critical Metaphor Analysis*. Palgrave Macmillan UK, London, 243–253.
- [17] Flusberg S, Matlock T, Thibodeau P, 2018, War Metaphors in Public Discourse. *Metaphor and Symbol*, 33(1): 1–18.
- [18] Semino E, Demjén Z, Demmen J, et al, 2017, The Online Use of Violence and Journey Metaphors by Patients with Cancer, as Compared with Health Professionals: A Mixed Methods Study. *BMJ Supportive & Palliative Care*, 7(1): 60–66.
- [19] Caballero R, 2003, Metaphor and Genre: The Presence and Role of Metaphor in the Building Review. *Applied Linguistics*, 24(2): 145–167.
- [20] Esenova O, 2007, Plant Metaphors for the Expression of Emotions in the English Language. *Beyond Philology*, 5: 7–21.
- [21] He G, 2011, A Comparative Study of Color Metaphors in English and Chinese. *Theory & Practice in Language Studies (TPLS)*, 1(12): 1804–1808.
- [22] Żołnowska I, 2011, Weather as the Source Domain for Metaphorical Expressions. *AVANT. Pismo Awangardy Filozoficzno-Naukowej*, 2011(1): 165–179.
- [23] Mujagić M, 2018, Dangerous Waters Metaphor in News Discourse on Refugee Crisis. *Metaphorik.de*, 28: 99–131.
- [24] Davies G, Chun R, Silva R, et al, 2001, The Personification Metaphor as a Measurement Approach for Corporate Reputation. *Corporate Reputation Review*, 4: 113–127.
- [25] Kovalenko L, Martynyuk A, 2018, English Container Metaphors of Emotions in Ukrainian Translations. *Advanced Education*, 5(10): 190–197.
- [26] Lakoff G, Johnson M, 2020, *Conceptual Metaphor in Everyday Language*. *Shaping Entrepreneurship Research*, Routledge, 475–504.

- [27] Gibbs R, 2011, Taking Metaphor Out of Our Heads and Putting It into the Cultural World. *Metaphor in Cognitive Linguistics: Selected Papers from the 5th International Cognitive Linguistics Conference, Amsterdam, 1997*, John Benjamins Publishing Company, 145–166.

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

The Practical Application of Big Data and Artificial Intelligence Technology in Educational Management

Chenglin Lu

Macau University of Science and Technology, Macau 999078, China

Copyright: © 2025 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract:

The practical application of big data and artificial intelligence (AI) technologies in educational management has become a crucial means to promote education modernization. These technologies are profoundly transforming the models and methods of educational management by optimizing management processes, enhancing educational quality, and achieving personalized education goals. This paper analyzes the practical applications of big data and AI technologies in educational management, aiming to inspire further discussions and research.

Keywords:

Big data
Artificial intelligence technology
Educational management
Practical application

Online publication: April 26, 2025

1. Introduction

Artificial intelligence (AI) is transforming the education ecosystem with unprecedented speed and depth. The Guidelines for the Integrated Application of National Smart Education Platform for Primary and Secondary Schools and Artificial Intelligence proposes a framework for five major application areas, revealing how AI can comprehensively empower classroom teaching^[1]. With the rapid development and popularization of generative AI, the “access threshold” in the education sector has been continuously lowered, and the human-AI collaborative teaching model is becoming the new normal. This paper will deeply explore the innovative applications of AI in educational management to help educators better grasp the new opportunities of AI-empowered education^[2].

2. Applications of big data in educational management

2.1. Data-driven precise governance

Big data technology provides a scientific decision-making basis for educational managers by collecting and analyzing various data in the education operation process, such as students’ learning behaviors, teachers’ teaching behaviors, and the usage of curriculum resources. For example, in teaching quality evaluation, by analyzing students’ learning data and teachers’ teaching behavior data, a comprehensive evaluation index system can be constructed to timely identify teaching problems and put forward improvement suggestions. In addition, big data can also help schools optimize resource allocation, such as reasonably distributing teaching materials and teaching staff according to data analysis results^[3].

2.2. Intelligent management and services

The application of big data technology has shifted educational management from traditional experience-driven to data-driven. For instance, through a learning analysis system, schools can gain real-time insights into students' learning dynamics, recommend suitable learning resources and paths, thereby improving learning outcomes. Meanwhile, big data helps schools achieve intelligent management, such as automatic class scheduling and grade analysis, which significantly enhances work efficiency^[4].

2.3. Educational equity and personalized development

Big data technology contributes to the rational allocation of educational resources and the promotion of educational equity. For example, by analyzing students' learning needs and development trends, managers can provide more targeted educational resources. Moreover, big data supports the realization of personalized education by analyzing students' learning habits and ability characteristics to tailor learning plans for each student.

2.4. Case studies

Colleges and universities serve as important application platforms for technology. In 2018, the Ministry of Education issued the Artificial Intelligence Innovation Action Plan for Higher Education Institutions^[5], encouraging the exploration of an "AI+X" talent cultivation model. In colleges and universities, big data technology is widely applied in teaching management and decision-making. For example, by analyzing students' learning behavior data and teachers' teaching behavior data, universities can optimize the allocation of teaching resources and teaching quality evaluation. Additionally, some universities have developed intelligent recommendation systems using big data technology to provide personalized learning suggestions for students. For example, Tsinghua University is one of the first institutions in China to engage in artificial intelligence teaching and research^[6-8]. Relying on the independently developed GLM4 large model with hundreds of billions of parameters and independent intellectual property rights as the platform and technical foundation, Tsinghua University has launched pilot work for eight courses. By

leveraging existing teaching data, public research papers, MOOC resources, and other materials, it fine-tunes GLM4 to form vertical domain models for different courses, and develops exclusive AI teaching assistants capable of functions such as example generation, automatic question creation, question answering and confusion clarification, computational reasoning, and evaluation guidance.

3. Applications of artificial intelligence in educational management

3.1. Intelligent teaching and personalized learning

AI technology can provide students with personalized learning experiences by analyzing their learning data^[9]. For example, California State University uses AI technology to predict students' learning performance and provide timely academic guidance and intervention measures. Furthermore, AI can help teachers adjust teaching content and methods through intelligent learning software and online learning platforms to improve teaching efficiency.

3.2. Teacher support and teaching optimization

AI technology can provide intelligent teaching support for teachers. For instance, AI teaching assistants can assist teachers in grading homework, answering students' questions, and adjusting teaching plans according to students' learning situations. Moreover, AI can help teachers better meet students' needs by generating personalized teaching materials and curriculum plans^[10].

3.3. Automation and intelligence of educational management

The application of AI technology makes educational management more efficient and intelligent. For example, in campus management, AI technology can be used for attendance management, homework supervision, and school affairs supervision. In addition, AI can provide managers with scientific teaching evaluation reports through virtual assistants and intelligent evaluation systems.

3.4. Case studies

In practice, AI technology has been widely applied in various educational scenarios. For example, the "Smart Learning Companion" project uses AI technology to

perceive and analyze students' learning behaviors, thus achieving precise teaching. Besides, some schools have developed virtual oral coaches and intelligent examination systems to provide students with immersive learning experiences. Beihang University's full-process interactive online teaching platform, based on generative large models, machine and deep learning, and other artificial intelligence technologies, connects all online and offline teaching links of teachers, forming a closed loop of students' pre-class, in-class, and after-class learning. Taking the 323 smart classrooms covered by the university as the foundation, it carries out digital processing of recorded course resources. With the full-process online teaching platform as the conditional support, it has developed an all-weather accompanying intelligent knowledge answering assistant to solve various problems in students' learning process^[11].

4. Integration of big data and artificial intelligence

4.1. Synergistic effects

The combination of big data and AI brings greater potential to educational management. For example, by analyzing students' learning data through big data and conducting in-depth mining with AI technology, it is possible to more accurately predict students' learning needs and development trends^[12]. Moreover, this integration can help schools achieve dynamic optimization of educational resource allocation.

4.2. Challenges and problems

Although the application of big data and AI in educational management has broad prospects, it also faces some challenges. For example, issues such as data privacy protection, high technical costs, and insufficient technical capabilities of teachers need to be taken seriously. To address these, schools should strengthen data security protection measures and enhance teachers' technical application capabilities through training.

4.2.1. Challenges in data security and privacy protection

Educational data includes sensitive information such as students' personal details, learning behaviors, and

psychological assessments. Once leaked, it can cause serious harm to students' rights and interests. However, current data encryption technologies and security protection systems still have vulnerabilities. Some educational institutions, due to insufficient technical capabilities or management negligence, struggle to resist hacker attacks and data theft. Additionally, in scenarios such as cross-border data flows and third-party platform access, vague definitions of rights and responsibilities lead to increased risks of privacy breaches^[13].

4.2.2. Adaptability and limitations of technological applications

Most existing big data analysis models and artificial intelligence algorithms are developed for general scenarios, failing to meet the complex needs of educational management. For example, in personalized learning path planning, algorithms may ignore unstructured data such as students' emotional factors and family environments, resulting in recommendations that deviate from actual needs. Meanwhile, issues such as sample bias and non-standard labeling in educational data can easily trigger algorithmic discrimination, exacerbating educational inequity.

4.2.3. Insufficient technical competency of educators

Despite the continuous update of technical tools, some teachers and managers still have a preliminary understanding of big data analysis and artificial intelligence applications, lacking the ability to interpret data, apply models, and make intelligent decisions. Problems such as insufficient training resources and limited practical opportunities further restrict the deep integration of technology and educational management, causing intelligent tools to become formalistic "ornaments."

4.2.4. Lagging institutional and regulatory systems

Existing educational management systems are mostly designed based on traditional management models and lack a normative framework for the application of intelligent technologies^[14]. There are no unified standards for key links such as data usage rights, algorithmic ethics review, and liability tracing, leading to risks of disorderly technology application. The mismatch between regulatory

measures and the pace of technological development makes it difficult to effectively prevent the abuse of technology.

4.2.5. Unbalanced technological investment and regional development

The deployment of big data and artificial intelligence technologies requires high capital and professional team support. However, educational institutions in underdeveloped regions struggle to afford costs such as server construction and algorithm research and development due to financial constraints. The significant gap in technological application levels between regions has exacerbated the unequal distribution of educational resources and hindered the achievement of educational equity goals.

4.3. Effective measures

4.3.1. Intelligence and transparency of educational management

Big data and artificial intelligence technologies have shifted educational management from experience-oriented to evidence-oriented through data-driven approaches. For example, by analyzing students' learning behaviors, teachers' teaching practices, and school management data, a comprehensive evaluation system can be established to promptly identify issues in the educational process and propose improvement suggestions. Additionally, AI technologies enable real-time monitoring of educational processes and intelligent early warning systems, thereby enhancing the transparency and predictability of educational management.

4.3.2. Optimal allocation of educational resources

Big data technologies can analyze the utilization of educational resources to optimize their allocation and improve efficiency. For instance, by examining data on curriculum scheduling and teacher deployment, schools can allocate resources more rationally. Meanwhile, AI algorithms facilitate the online circulation of high-quality educational resources, promoting educational equity. In scientific research, AI tools help teachers quickly understand the current status and hot issues of research topics, construct research frameworks, and improve research capabilities and the success rate of

project applications. The scenario of "project framework construction" demonstrates how teachers can efficiently use academic resources through AI tools to initially build project application frameworks. The "academic originality verification" scenario assists teachers in intelligent academic integrity management and improves the quality of educational research. Teachers can use AI tools to detect language errors in papers and check the originality of their work, thereby avoiding academic misconduct. This not only enhances the quality of teachers' research papers but also ensures the standardization and originality of academic research^[15].

4.3.3. Personalized education and teaching improvement

Artificial intelligence technologies can provide personalized learning plans and tutoring suggestions based on students' learning conditions, helping teachers better understand students' learning status and adjust teaching strategies. Furthermore, by analyzing students' learning data, AI can predict learning trends and needs, thereby supporting educational decision-making. AI technology provides intelligent support for the design and organization of teaching and research activities. Novice teachers can leverage digital resources on platforms and use AI to design high-quality teaching and research activity plans. By analyzing the highlights and transferable components of excellent teaching and research cases, AI can generate structured and clearly outlined teaching and research plans, enhancing the pertinence and effectiveness of such activities. In the scenario of "high-quality course production," AI assists teachers in deconstructing high-quality teaching cases. By comparing their own lesson plans with those of excellent courses, teachers can receive specific improvement suggestions. This precise comparative analysis helps teachers identify clear directions for improvement, accelerate their professional growth, and achieve the transition from novices to experts.

4.3.4. Dynamic monitoring and evaluation of educational quality

The big data-based intelligent educational decision-making system enables dynamic monitoring of educational quality and presents data results through

visualization tools, providing a scientific basis for managers. For example, by integrating classroom teaching data, homework data, and assessment data, a comprehensive evaluation of teaching quality can be conducted, with targeted improvement suggestions offered. AI technology provides data support and intelligent analysis for educational decision-making. The scenario of “AI assisting school official document writing” demonstrates how to use AI tools to efficiently complete official document writing tasks and improve school administrative efficiency. The scenario of “human-computer collaboration in building emergency response plans” shows how AI technology can be used to identify safety hazards, quickly respond to emergencies, and accurately push safety education content, thereby constructing a full-process safety management system. In the scenario of “AI helping to resolve regulatory challenges,” AI technology offers solutions for the supervision of online education platforms. By reducing educational anxiety through public supply as the main approach, combining high-quality resources from the National Smart Education Platform for Primary and Secondary Schools, and establishing stratified and classified access and exit mechanisms, a model of “public safety net + market supplementation” is formed. This not only safeguards the public welfare nature of education but also promotes the sustainable development of the industry. These application scenarios fully demonstrate the value of AI in educational governance—improving the efficiency and accuracy of educational management through data-driven, precise decision-making, and providing strong support for the high-quality development of education.

4.3.5. Modernization of educational governance

The application of big data and artificial intelligence technologies has also promoted the modernization of educational governance. For example, blockchain technology ensures the tamper-proof and transparent management of educational data, enhancing the credibility of educational management. Additionally, cloud computing technologies enable the sharing of educational resources and the optimization of service models. AI is reshaping the way schools communicate with families. The “home-school-community collaborative education practice” scenario, implemented through the AI platform

“Beijing Education New Map,” establishes a closed-loop educational model of “online learning—offline practice—achievement sharing.” The platform provides functions such as base queries, AI-powered dialogue, and home-school collaborative education for teachers, parents, and students, breaking down communication barriers among homes, schools, and communities while promoting information sharing and resource integration. The Guidelines for the Integrated Application of the National Smart Education Platform for Primary and Secondary Schools and Artificial Intelligence identifies “home-school-community collaborative education” as a key application field. By optimizing collaboration processes among homes, schools, and communities, AI technology promotes information sharing, resource complementarity, and targeted policy implementation, effectively integrating the resources of these three parties and fostering the establishment and improvement of a collaborative education mechanism.

5. Conclusion

From the intelligentization of the entire curriculum teaching chain to the personalized guidance of teacher-student development, from the intelligent empowerment of teaching research and scientific research to the precise decision-making of educational governance, from the collaborative innovation of home-school-community co-education, AI technology is building a more open, intelligent, and efficient educational ecosystem. The practical application of big data and AI technology in educational management has demonstrated strong potential. These technologies can not only improve the scientific and refined level of educational management but also promote educational equity and personalized development. However, during the promotion process, attention should also be paid to issues such as data privacy protection and technology popularization. In the future, with the continuous advancement of technology and the expansion of application scenarios, big data and AI will play a more important role in educational management. The new paradigm of human-computer collaborative education will be further deepened, and scenarios of AI-empowered classrooms will become more diverse, leading to more profound transformations

in teaching and learning methods. Only by actively embracing this transformation can educators maintain

their professional advantages in the AI era and lead the innovative development of education.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Sun Y, 2020, Discussion on the Application of Artificial Intelligence in Smart Education. *Computer Products & Circulation*, (11): 152–153.
- [2] Li J, 2025, The Rise of 5G + Artificial Intelligence Technology and Its Impact on Education. *China Broadband*, (01): 89–92.
- [3] Chen Y, 2024, Curriculum Development Based on Artificial Intelligence Technology—Review of Deep Integration and Innovative Application of Artificial Intelligence in Education and Teaching. *Yangtze River*, 55(12): 221–222.
- [4] Wang W, 2024, A Brief Discussion on the Application of Artificial Intelligence Technology in the Education Field under the Big Data Environment. *China Information Times*, (09): 68–71.
- [5] Xiao Q, 2025, The Liberation and Restraint of Artificial Intelligence Technology on Contemporary Teaching. *Popular Literature and Art*, (03): 208–209.
- [6] Gu Y, 2025, Research on the Application of Artificial Intelligence Technology in Computer-Aided Instruction. *Paper Making Equipment & Materials*, 54(01): 184–186.
- [7] Zhang J, Zuo JY, Liu S, 2025, Research on the Application of Artificial Intelligence Technology in the Educational Metaverse. *China Educational Technology & Equipment*, (4): 86–88.
- [8] Dong TW, Zhang F, Wang S, et al., 2023, A Review of Smart Education Applications Based on Artificial Intelligence Technology. *Electronic Technology*, (12): 15–66.
- [9] Wang YN, 2023, Application of Artificial Intelligence Technology in Smart Campuses. *Integrated Circuit Applications*, (12): 1–18.
- [10] Du CF, 2024, Application of Artificial Intelligence Technology in Micro-Lecture Dubbing. *Audio Engineering*, (2): 61–65.
- [11] Gong J, 2024, Exploration of Innovative Paths for Educational Management in the Context of Education Informatization. *Journal of Science and Technology of Education*, (29): 1–13.
- [12] Qin ZQ, Cai QL, 2024, Research on the Development and Innovation of Educational Teaching Management in Higher Vocational Colleges under the Background of Informatization. *China Science and Technology Paper*, (7): 82.
- [13] Li HP, Zhao Q, 2022, Innovation of University Educational Management Models in the Context of Informatization: Review of In-Depth Integration of Education Informatization and University Education and Teaching Reform. *China Science and Technology Paper*, (3): 55–76.
- [14] Feng YY, 2021, Models and Methods of Online Learning Evaluation in Colleges and Universities under the Background of Informatization. *Journal of Beijing City University*, (3): 43–77.
- [15] Li X, 2016, Discussion on Innovative Strategies for Higher Vocational Education Management Models in the Context of Informatization. *Modern Vocational Education*, (34): 23–36.

Publisher's note

Whioce Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.